SERVICE MANUAL

FISHER

FM STEREO/MW/LW RECEIVER WITH WIRELESS REMOTE CONTROL RRS-9020

RS-9020

(EUROPE)

132 351 40

SPECIFICATIONS

POWER AMPLIFIER SECTION

Minimum RMS sine wave power per channel within stated bandwidth at no more than stated
Distortion and with 8Ω load ..... 55W (DIN)
Total Harmonic Distortion 0.09%
I.M.Distortion 0.2%
Speaker Damping ..... >20

PREAMPLIFIER SECTION

Frequency Response
- Phono (RIAA) ..... ±2dB
- AUX (20Hz ~ 20kHz) ..... +0, −2dB

Input Sensitivity and Impedance
- Phono 2.5mV/50kΩ
- Tape Monitor 1,2 ..... 150mV/50kΩ
- AUX/VIDEO/CD 150mV/50kΩ

Phono Max. Input Capability 150mV
Multi Tone Control
- Super Bass ..... 63Hz ±10dB
- Bass ..... 250Hz ±10dB
- Middle ..... 1kHz ±10dB
- Treble ..... 4kHz ±10dB
- Super Treble ..... 16kHz ±10dB

Loudness Contour (100Hz/10kHz) ..... +8dB/+4dB
Hum and Noise (IHF Short Circuit, A Network)
- Phono 70dB
- Tape Monitor 1,2 ..... 90dB
- AUX/VIDEO/CD 90dB
- Source Direct (AUX) 90dB

FM SECTION

Usable Sensitivity
- Mono 1.0µV

46dB Quieting Sensitivity
- Mono 4.0µV

Signal-to-Noise Ratio
- Mono 67dB
- Stereo 63dB

Capture Ratio 2.0dB
Alt. Channel Selectivity(±300kHz) 55dB
Image Response Ratio 100dB
Spurious Response Ratio 95dB
IF Response Ratio ..... >90dB
AM Suppression Ratio 55dB
Total Harmonic Distortion at 60dBf
- Mono (1kHz) 0.1%
- Stereo (1kHz) 0.2%

Stereo Separation
(100Hz/1kHz/10kHz) 40/40/30dB

– Specifications and design are subject to change without notice. –

REFERENCE No. WM-570447

SPECIFICATIONS (Continued)

Sub-Carrier Rejection (19kHz/38kHz) 30/50dB
Audio Frequency Response
(20Hz ~ 15kHz) ..... ±3.0dB

MW SECTION
Usable Sensitivity 600µV/m
Selectivity 35dB
Signal-to-Noise Ratio 55dB
Image Response Ratio 38dB
IF Response Ratio 60dB

LW SECTION
Usable Sensitivity 2000µV/m
Selectivity (±9kHz) 40dB
Signal-to-Noise Ratio 50dB
Image Response Ratio 45dB
IF Response Ratio 65dB

GENERAL
Power Requirements ..... AC 220V
(50Hz) ..... 300 Watts
AC Outlet (Switched) 2
Dimensions (WxHxD) ..... 440 x 113.5 x 271 mm
Weight (approximate) ..... 6.7 kg

– Specifications and design are subject to change without notice. –

POWER AMPLIFIER ADJUSTMENT

BEFORE ADJUSTMENT

Unplug the AC power cord and set the front panel controls as follows:

- Power Switch to OFF position.
- Set the SPEAKERS Switch to the OFF position.
- Turn the MASTER VOLUME Control to minimum.
- IDLING CURRENT ADJUSTMENT VR401/VR402 (on the Main/Tuner P.C.Board) setting to mechanical center position.
- Connect the AC power cord and Power Switch to the ON position.

IDLING CURRENT ADJUSTMENT

This adjustment is very sensitive to changes in ambient temperature. Allow set to operate for 2 minutes before attempting this alignment.

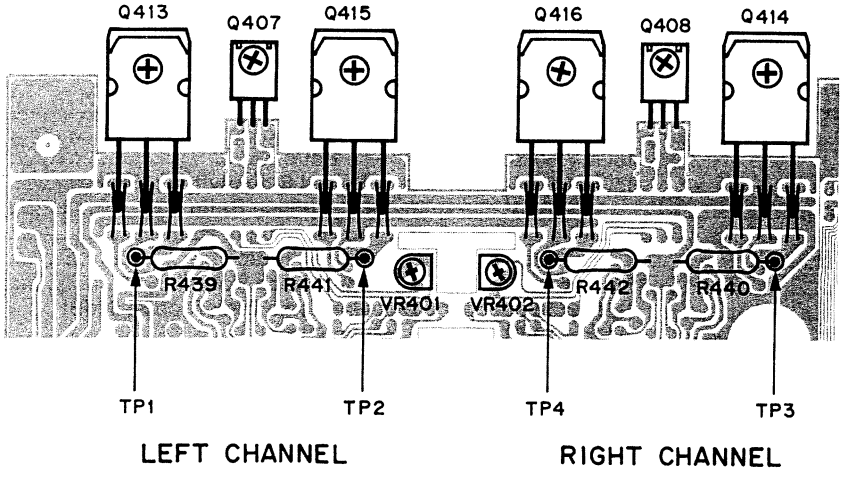
LEFT AMPLIFIER

1. Connect the DC Voltmeter between Pins TP1 and TP2 on the Main/Tuner P.C.Board.
2. Adjust the VR401 for an indication of 10mV ±2mV on the DC Voltmeter.

RIGHT AMPLIFIER

1. Connect the DC Voltmeter between Pins TP3 and TP4 on the Main/Tuner P.C.Board.
2. Adjust the VR402 for an indication of 10mV ±2mV on the DC Voltmeter.

ADJUSTMENT POINTS



CAUTION ON RF ADJUSTMENT

This model uses a microprocessor for memory preset control for the various bands.
This function has been used to preset frequency points for the different bands to permit adjustment and make it possible to check the function of the microprocessor. To use this supplemental function, Press and hold down the TUNER Function button for approximately 5 seconds so that the frequency points show in the following table before beginning adjustment. The following table shows the initially preset frequencies.

Band	Memory					
	1	2	3	4	5	6
FM-1	87.5MHz	108MHz	88MHz	98MHz	100Hz	96MHz
MW/LW	603kHz	1404kHz	999kHz	160kHz	350kHz	250kHz

FM TUNER ALIGNMENT

FM ALIGNMENT – Band Selector switch to FM/ST(MUTE) position.
Note is almost unnecessary to adjust coil in Front End as perfectly adjusted.

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
1. FM IF S-CURVE ALIGNMENT	Connect 10.7MHz Radio IF Genescope output to Front End 8pin (TP9) and ground lead to chassis. Use 5pF capacitor in series with generator output lead.	Position of non-interference Minimum Frequency.	Connect Radio IF Genescope input to TP7 and ground lead to chassis.	Adjust FM DET 1 Coil (L307) and FM DET 2 (L308) so that S-wave from becomes symmetrical.
2. DETECTOR ADJUSTMENT (MINIMUM T.H.D.)	Connect FM RF signal generator through FM Dummy Antenna to FM Antenna terminals. Set generator to 98MHz ±2kHz. Modulate with 1kHz to provide ±40kHz deviation. Setting generator with attenuator output level for 60dBμV.	Set MODE switch to FM MONO position and Preset STATION button to "4" posion. Set to 98MHz.	Connect DC Voltmeter across TP2 and TP4.	Adjust FM DET 1 Coil (L307) until DC Voltmeter reads 0V ±50mV.
			Connect Harmonic Distortion Analyzer to REC OUT.	Adjust FM DET 2 Coil (L308) for minimum gain and best linearity.
Note: Repeat Step 1 (FM DET 1 Coil L307) and 2 (FM DET 2 Coil L308) until optimum alignment is reached.				
3. FM STEREO SIGNAL SEPARATION CONTROL	Connect FM Stereo SG to FM Antenna terminals. 19kHz signal ON. Main channel, sub channel signal ON. Apply 1000Hz signal from LEFT channel.	Same as above. Set Mode switch to ST(MUTE) position.	Connect AC VTVM and Oscilloscope to REC OUT.	Adjust VR303 for minimum output.
	Same as above for RIGHT channel.		Connect AC VTVM and Oscilloscope to REC OUT.	
4. FM MUTING AUTO STOP SENSITIVITY ADJUSTMENT	Set generator to 98MHz. Adjust attenuator output level to 10dBμV.	Same as above.	Front panel TUNED Indicator Display.	Set Mode Switch to ST(MUTE). Adjust VR302 until the TUNED Indicator partly light up.
Note: Decrease the output level of ATT and confirm that the wave form disappears. Increase the output level of ATT again and confirm that the input level meets the specifications sufficiently when the wave form has appeared.				

Use a screwdriver with plastic grip for all adjustments.

MW Frequency Cover Range
Tuning Voltage Value at TP 1

(Table 1)

	522kHz	1611kHz
Minimum	0.8V	7.0V
Typical	1.0V	7.6V
Maximum	1.3V	9.0V

LW Frequency Cover Range
Tuning Voltage Value at TP 1

(Table 2)

	153kHz	360kHz
Minimum	1.0V	7.0V
Typical	1.2V	7.5V
Maximum	1.5V	9.0V

AM TUNER ALIGNMENT

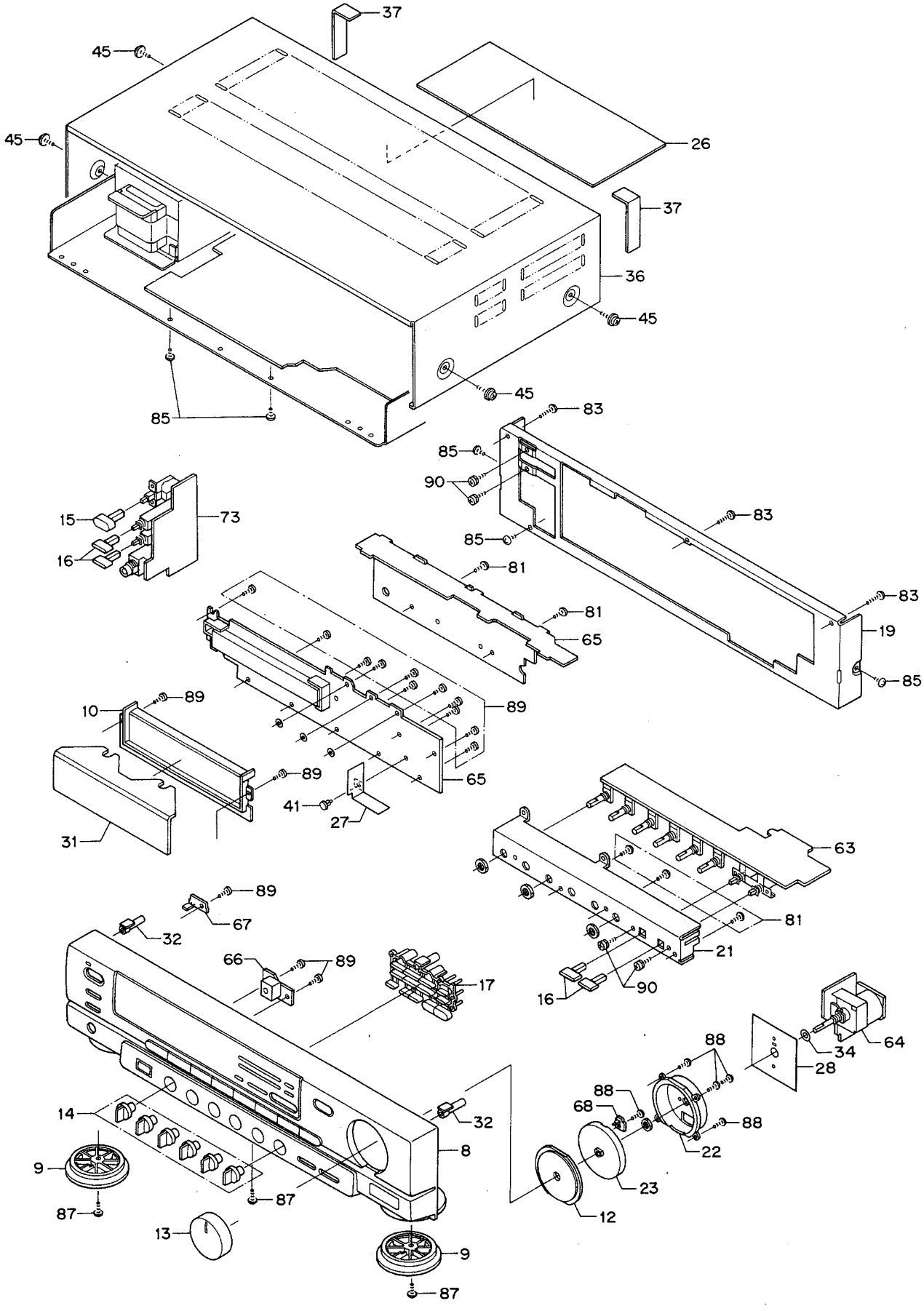
AM ALIGNMENT – Band Selector switch to MW or LW position.
Maintain generator output as low as possible for suitable indication.

Note: Perform this alignment after FM Tuner Alignment.

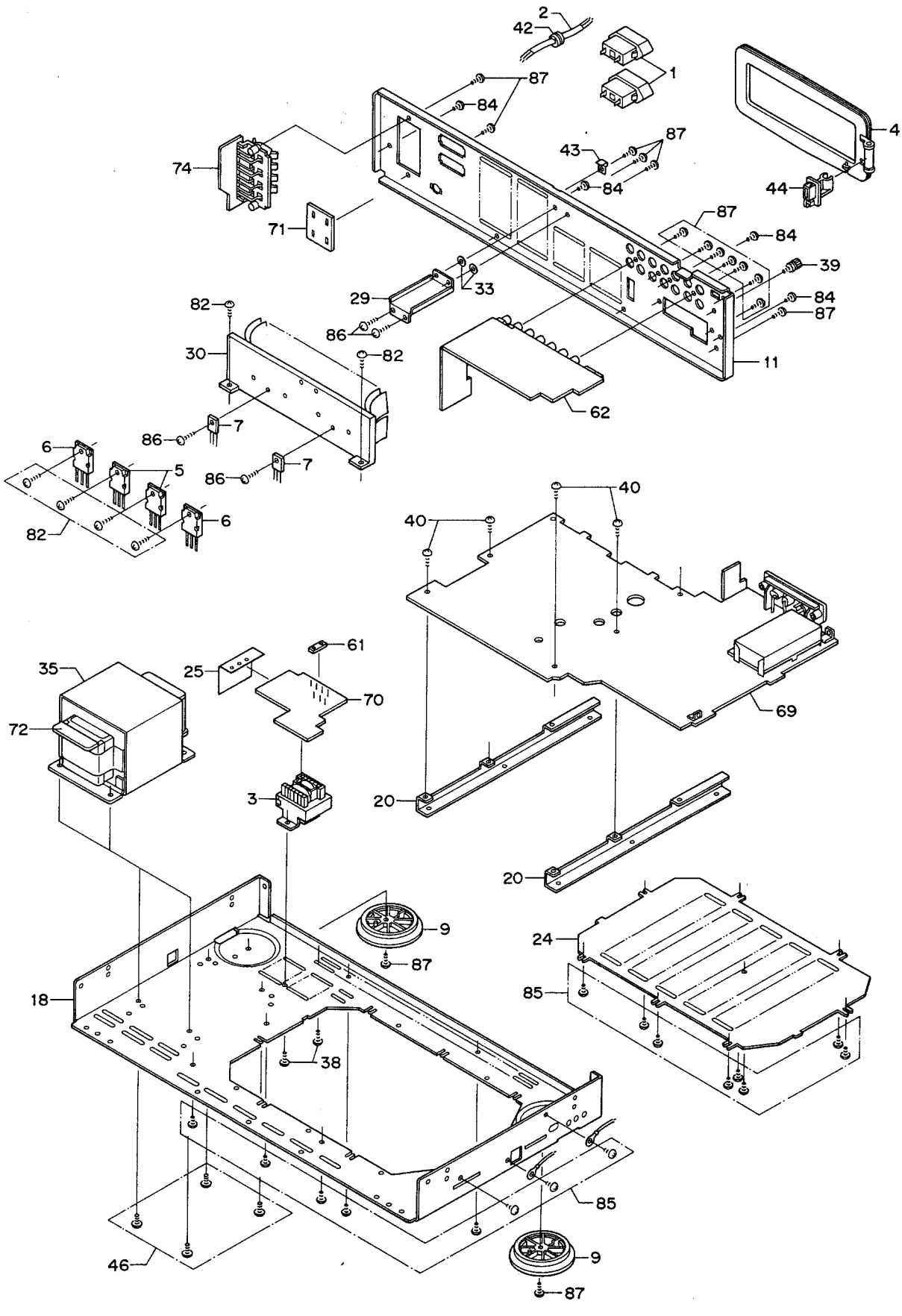
ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
1. AM IF ALIGNMENT	Connect 450kHz Radio IF Genescope output to AM antenna terminal Adjust output level to 100dBμV.	Position of non-interference Minimum Frequency.	Connect Radio IF Genescope input to TP6 and ground lead to chassis.	Adjust AM IFT (L306) for maximum gain and best symmetry. Keep signal low enough for noise on response
2. MW RF FREQUENCY COVER ALIGNMENT (1611kHz)	Do not connect generator.	Front Panel DIGITAL Counter Display Set to 1611kHz.	Connect DC Voltmeter to TP1 and ground lead to chassis.	Check DC Voltmeter for Indication 7.0V ~ 9.0V.
3. (522kHz)	Same as above.	DIGITAL Counter Display Set to 522kHz.	Same as above.	Check DC Voltmeter for Indication 0.8V ~ 1.3V.
Note: Repeat the adjustments in items 2 and 3. Then, confirm that each voltage becomes 1.0V to 7.6V at receiving frequency of 522kHz to 1611kHz. **(See Table 1)**				
4. LW RF FREQUENCY COVER ALIGNMENT (360kHz)	Do not connect generator.	Front Panel DIGITAL Counter Display Set to 360kHz.	Connect DC Voltmeter to TP1 and ground lead to chassis.	Check DC Voltmeter for Indication 7.0V ~ 9.0V.
5. (153kHz)	Same as above.	DIGITAL Counter Display Set to 153kHz.	Same as above.	Check DC Voltmeter for Indication 1.0V ~ 1.5V.
Note: Repeat the adjustments in Items 4 and 5. Then, confirm that each voltage becames 1.2V to 7.5V at receiving frequency of 153kHz to 360kHz. **(See Table 2)**				
6. MW RF TRACKING ALIGNMENT (603kHz)	Connect Standard Loop Antenna to output terminal of AM RF Signal Generator. Place Loop Antenna 60cm away from Loop antenna (Unit). Generator Setting to 603kHz or 1404kHz. Modulate with 1000Hz (30 % modulation).	Set Preset STATION button to "1" position. Set to 603kHz.	Connect AC VTVM and Oscilloscope to REC OUT.	Adjust MW ANT Coil (L302) for maximum gain output.
7. (1404kHz)		Change Preset STATION button to "2" position. Set to 1404kHz.	Same as above.	Adjust MW ANT Trimmer (TC301) for maximum gain output.
Note: Repeat the adjustments in Items 6 and 7. Then, confirm there is no tracking error.				
8. LW RF TRACKING ALIGNMENT (160kHz)	Change generator setting to 160kHz.	Set Preset STATION button to "4" position. Set to 160kHz.	Connect AC VTVM and Oscilloscope to REC OUT.	Adjust LW ANT Coil (L303) for maximum gain output.
9. (350kHz)	Change generator setting to 350kHz.	Change Preset STATION button to "5" position. Set to 350kHz.	Same as above.	Adjust LW ANT Trimmer (TC302) for maximum gain output.
Note: Repeat the adjustments in Items 8 and 9. Then, confirm there is no tracking error.				
10. AM AUTO STOP SENSITIVITY ADJUSTMENT	Change generator setting to 999kHz and output level to 60dBμV/m.	Set Preset STATION button to "3" position. Set to 999kHz.	Front Panel TUNED Indicator Display.	Adjust VR301 until the Indicator partly light up.

Use a screwdriver with plastic grip for all adjustments.

CABINET & CHASSIS EXPLODED VIEW (1)



CABINET & CHASSIS EXPLODED VIEW (2)



CABINET & CHASSIS PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PACKAGE			
	620 198 1568	Pad,Bottom	1
	620 198 1575	Pad,Top	1
	620 204 1858	Pad,Side	2
	620 059 6596	Patching Sheet	1
	620 148 5639	Poly Cover 100 x 190	1
	620 148 8012	Sheet Polyethylene	1
	620 152 7452	Serial No. Sheet	2
ACCESSORIES			
	620 202 3236	Assy,Poly Cover	1
	620 202 3250	Instruction Manual	1
	620 038 1673	FM Antenna Assy	1
	620 057 8783	Bag Fan	1
	620 062 0543	Serial No. Sheet	1
	620 112 8123	Holder Antenna	1
	620 152 2624	Certificate Card	1
	620 202 3243	Remocon,RRS-9020	1
CABINET			
	620 125 8424	Wire Band	13
	620 152 7452	Serial No. Sheet	1
1	⚠ 620 017 1212	AC Socket	2
2	⚠ 620 023 7550	Power Cord	1
3	⚠ 620 182 9778	Power Trans	1
4	620 028 2741	AM Loop Antenna	1
or	620 028 2734	AM Loop Antenna	1
5	405 080 7602	TR 2SA1264N-O [Q415]	1
5	405 080 7602	TR 2SA1264N-O [Q416]	1
6	405 080 7800	TR 2SC3181N-O [Q413]	1
6	405 080 7800	TR 2SC3181N-O [Q414]	1
7	405 022 8001	TR 2SD1682-S [Q407]	1
7	405 022 8001	TR 2SD1682-S [Q408]	1
8	620 202 1898	Assy,Cabinet	1
9	620 198 6969	Assy,Foot	4
10	620 202 2277	Assy,Mount-M,Filter	1
11	620 202 1744	Panel,Rear	1
12	620 198 4835	Window,Volume	1
13	620 198 4859	Knob,Rotary,Volume	1
14	620 202 1805	Knob,Rotary	6
15	620 198 6938	Knob,Power	1
16	620 198 0752	Button,Push	4
17	620 201 4562	Button,Tuner	1
18	620 198 0929	Chassis	1
19	620 202 1737	Chassis,Front	1
20	620 202 1768	Bracket-E,PCB,Main	2
21	620 202 1782	Bracket-E,PCB,Volume	1
22	620 198 4828	Mount-E,Volume	1
23	620 198 4842	Mount-E,Indicator	1
24	620 198 0936	Plate,Bottom	1
25	620 203 2214	Plate,Sever	1
26	620 203 4843	Plate,Sever	1
27	620 204 0240	Plate,Sever	1
28	620 203 4850	Shield,Plate	1
29	620 204 0561	Reinforcement	1
30	620 202 4219	Heat Sink	1
31	620 202 1829	Filter,Edge Light	1
32	620 198 0912	Spacer,Cabinet	2
33	620 204 3524	Spacer	2
34	620 204 3548	Spacer	1
35	⚠ 620 201 8638	Power Trans,SEV,130VA	1
36	620 045 6913	Cover	1
37	620 048 4541	Metal Reinforce	2
38	620 051 1735	Screw 3.0X8 Z	2
39	620 051 2152	Screw Ground	1
40	620 051 3692	SCR TPG BRZ +M3.0X6	4
41	620 191 2746	Rivet 3.5	1
42	620 053 2136	Bushing (MP4N-4)	1
43	620 117 2447	Bracket Cover	1
44	620 122 2210	Holder Antenna	1
45	620 123 0284	SCR TPG BIN +M4.0X8	4
46	620 123 0833	SCR Bind TAP-B +M4X10	4
61	620 202 1904	PCB,Voltage,Select	1
62	620 204 8857	Assy,PCB,Input	1
63	620 202 1485	Assy,PCB,Graphic EQ.	1
64	620 202 1492	Assy,PCB,Main,Volume	1
65	620 204 8871	Assy,PCB,μ-CON	1
66	620 202 1539	Assy,PCB,Remote Control	1
67	620 202 1546	Assy,PCB,Standby,LED	1
68	620 202 1553	Assy,PCB,Volume,LED	1
69	620 202 1560	Assy,PCB,Main/Tuner	1
70	620 202 1577	Assy,PCB,Sub,Trans	1
71	620 202 1584	Assy,PCB,AC,Outlet	1
72	620 202 1591	Assy,PCB,Main,Trans	1
73	620 202 1607	Assy,PCB,Power Switch	1
74	620 202 1614	Assy,PCB,Speaker,Terminal	1
81	411 020 5706	SCR S-TPG BRZ 2.6X8	5
82	411 020 5904	SCR S-TPG BRZ 3X10	6
83	411 020 7304	SCR S-TPG BRZ 3X30	3
84	411 020 7601	SCR S-TPG BRZ 3X5	4
85	411 020 7700	SCR S-TPG BRZ 3X6	21
86	411 020 8004	SCR S-TPG BRZ 3X8	4
87	411 099 9803	SCR S-TPG BRZ 3X8	18
88	411 021 0809	SCR S-TPG BIN 2X6	5
89	411 021 1202	SCR S-TPG BIN 2X8	16
90	411 003 8908	SCR PAN+SW 3X6	4

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
ASSY,PCB,INPUT			
62	620 204 8857	Assy,PCB,Input	1
	620 202 1690	PCB,Phono,Shield	1
	620 202 1706	PCB,Input,Connect	1
	620 188 9918	Pin Jack 2P Black	1
	620 188 9932	Pin Jack 6P Black	2
	620 050 2450	Metal Mount Antenna	1
CN101	620 021 6555	Plug 4P	1
CN103	620 200 5782	Connector-P,TFC-B08Y-E1	1
CN104	620 200 5782	Connector-P,TFC-B08Y-E1	1
CN105	620 203 4713	Connector-S,5513-NA,14P	1
IC101	409 057 4403	IC UPC4570C	1
IC102	409 109 5105	IC LC7821	1
Q117	405 037 0601	TR 2SC3899-AC	1
D101	407 005 3805	DIODE DS442-BT	1
D104	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
C101	403 071 6207	CERAMIC 220P K 50V	1
C102	403 071 6207	CERAMIC 220P K 50V	1
C103	403 071 6207	CERAMIC 220P K 50V	1
C104	403 071 6207	CERAMIC 220P K 50V	1
C105	403 051 2106	ELECT 4.7U M 50V	1
C106	403 051 2106	ELECT 4.7U M 50V	1
C107	403 071 6207	CERAMIC 220P K 50V	1
C108	403 071 6207	CERAMIC 220P K 50V	1
C109	403 038 2402	ELECT 100U M 6.3V	1
C110	403 038 2402	ELECT 100U M 6.3V	1
C111	403 059 0401	POLYESTER 0.018U K 50V	1
C112	403 059 0401	POLYESTER 0.018U K 50V	1
C113	403 061 8709	POLYESTER 4700P K 50V	1
C114	403 061 8709	POLYESTER 4700P K 50V	1
C115	403 051 2106	ELECT 4.7U M 50V	1
C116	403 051 2106	ELECT 4.7U M 50V	1
C117	403 071 6207	CERAMIC 220P K 50V	1
C118	403 071 6207	CERAMIC 220P K 50V	1
C119	403 121 9509	CERAMIC 0.1U Z 50V	1
C120	403 121 9509	CERAMIC 0.1U Z 50V	1
C121	403 071 6207	CERAMIC 220P K 50V	1
C122	403 071 6207	CERAMIC 220P K 50V	1
C125	403 071 6207	CERAMIC 220P K 50V	1
C126	403 071 6207	CERAMIC 220P K 50V	1
C129	403 071 6207	CERAMIC 220P K 50V	1
C130	403 071 6207	CERAMIC 220P K 50V	1
C133	403 071 6207	CERAMIC 220P K 50V	1
C134	403 071 6207	CERAMIC 220P K 50V	1
C137	403 071 6207	CERAMIC 220P K 50V	1
C138	403 071 6207	CERAMIC 220P K 50V	1
C141	403 071 6207	CERAMIC 220P K 50V	1
C142	403 071 6207	CERAMIC 220P K 50V	1
C145	403 047 4305	ELECT 47U M 25V	1
C146	403 047 4305	ELECT 47U M 25V	1
C147	403 049 1708	ELECT 1U M 50V	1
C148	403 003 3700	CERAMIC 0.022U Z 25V	1
C149	403 003 3700	CERAMIC 0.022U Z 25V	1
R100	401 024 7004	CARBON 1K JA 1/6W	1
R101	401 025 7805	CARBON 2.2K JA 1/6W	1
R102	401 025 7805	CARBON 2.2K JA 1/6W	1
R103	401 024 7707	CARBON 100K JA 1/6W	1
R104	401 024 7707	CARBON 100K JA 1/6W	1
R105	401 024 7707	CARBON 100K JA 1/6W	1
R106	401 024 7707	CARBON 100K JA 1/6W	1
R107	401 026 0607	CARBON 270 JA 1/6W	1
R108	401 026 0607	CARBON 270 JA 1/6W	1
R109	401 025 8703	CARBON 220K JA 1/6W	1
R110	401 025 8703	CARBON 220K JA 1/6W	1
R111	401 025 1902	CARBON 15K JA 1/6W	1
R112	401 025 1902	CARBON 15K JA 1/6W	1
R113	401 024 7707	CARBON 100K JA 1/6W	1
R114	401 024 7707	CARBON 100K JA 1/6W	1
R115	401 012 5708	CARBON 1K JA 1/4W	1
R116	401 012 5708	CARBON 1K JA 1/4W	1
R117	401 024 7004	CARBON 1K JA 1/6W	1
R118	401 024 7004	CARBON 1K JA 1/6W	1
R119	401 024 7004	CARBON 1K JA 1/6W	1
R120	401 024 7004	CARBON 1K JA 1/6W	1
R121	401 024 7004	CARBON 1K JA 1/6W	1
R122	401 024 7004	CARBON 1K JA 1/6W	1
R123	401 024 7004	CARBON 1K JA 1/6W	1
R124	401 024 7004	CARBON 1K JA 1/6W	1
R125	401 024 7004	CARBON 1K JA 1/6W	1
R126	401 024 7004	CARBON 1K JA 1/6W	1
R127	401 024 7004	CARBON 1K JA 1/6W	1
R128	401 024 7004	CARBON 1K JA 1/6W	1
R129	401 024 7400	CARBON 10K JA 1/6W	1
R131	401 012 5708	CARBON 1K JA 1/4W	1
R133	401 016 2604	CARBON 220 JA 1/4W	1
R134	401 016 2604	CARBON 220 JA 1/4W	1
R199	401 016 3809	CARBON 2.2K JA 1/4W	1
ASSY,PCB,GRAPHIC EQ.			
63	620 202 1485	Assy,PCB,Graphic EQ.	1
CN106	620 202 3328	Connector-S,5244,8P	1
CN107	620 202 3007	Connector-P,53095,5P	1
CN108	620 202 2994	Connector-P,53095,10P	1
SW101	620 201 4302	Switch,Push,2S	1
VR101	620 202 3397	VR,Rotary,2X250KSW	1
VR102	620 202 3397	VR,Rotary,2X250KSW	1
VR103	620 202 3397	VR,Rotary,2X250KSW	1
VR104	620 202 3397	VR,Rotary,2X250KSW	1
VR105	620 202 3397	VR,Rotary,2X250KSW	1
VR106	620 202 3403	VR,Rotary,1X200KW	1
IC103	409 166 5308	IC TC9215P	1
IC104	409 070 7108	IC RC4558	1
Q101	405 057 6409	TR 2SC4038-R-TL2	1
or	405 057 6300	TR 2SC4038-S-TL2	1
Q102	405 057 6409	TR 2SC4038-R-TL2	1
or	405 057 6300	TR 2SC4038-S-TL2	1
Q107	405 096 0406	TR 2SC2021LN-R	1
or	405 096 0505	TR 2SC2021LN-S	1
Q108	405 096 0406	TR 2SC2021LN-R	1
or	405 096 0505	TR 2SC2021LN-S	1
Q109	405 096 0406	TR 2SC2021LN-R	1
or	405 096 0505	TR 2SC2021LN-S	1
Q110	405 096 0406	TR 2SC2021LN-R	1
or	405 096 0505	TR 2SC2021LN-S	1
Q111	405 057 6409	TR 2SC4038-R-TL2	1
or	405 057 6300	TR 2SC4038-S-TL2	1
Q112	405 057 6409	TR 2SC4038-R-TL2	1
or	405 057 6300	TR 2SC4038-S-TL2	1
Q113	405 057 6409	TR 2SC4038-R-TL2	1
or	405 057 6300	TR 2SC4038-S-TL2	1
Q114	405 057 6409	TR 2SC4038-R-TL2	1
or	405 057 6300	TR 2SC4038-S-TL2	1
Q115	405 057 6409	TR 2SC4038-R-TL2	1
or	405 057 6300	TR 2SC4038-S-TL2	1
Q116	405 057 6409	TR 2SC4038-R-TL2	1
or	405 057 6300	TR 2SC4038-S-TL2	1
C151	403 049 5508	ELECT 10U M 50V	1
C152	403 049 5508	ELECT 10U M 50V	1
C153	403 068 9402	CERAMIC 100P K 50V	1
C154	403 068 9402	CERAMIC 100P K 50V	1
C155	403 068 9402	CERAMIC 100P K 50V	1
C156	403 068 9402	CERAMIC 100P K 50V	1
C157	403 096 8606	ELECT 1.5U K 50V	1
C158	403 096 8606	ELECT 1.5U K 50V	1
C159	403 048 7701	ELECT 0.47U M 50V	1
C160	403 048 7701	ELECT 0.47U M 50V	1
C161	403 063 8103	POLYESTER 0.082U K 50V	1
C162	403 063 8103	POLYESTER 0.082U K 50V	1
C163	403 001 5805	CERAMIC 0.022U N 16V	1
C164	403 001 5805	CERAMIC 0.022U N 16V	1
C165	403 004 2207	CERAMIC 5600P M 25V	1
C166	403 001 8400	CERAMIC 5600P M 16V	1
C167	403 003 3700	CERAMIC 0.022U Z 25V	1
C168	403 003 3700	CERAMIC 0.022U Z 25V	1
C169	403 001 1906	CERAMIC 0.01U M 16V	1
C170	403 001 1906	CERAMIC 0.01U M 16V	1
C171	403 001 7601	CERAMIC 4700P M 16V	1
C172	403 001 7601	CERAMIC 4700P M 16V	1
C173	403 001 4006	CERAMIC 1500P M 16V	1
C174	403 001 4006	CERAMIC 1500P M 16V	1
C175	403 074 9205	CERAMIC 680P K 50V	1
C176	403 074 9403	CERAMIC 680P K 50V	1
C177	403 050 3708	ELECT 22U M 50V	1
C178	403 050 3708	ELECT 22U M 50V	1
C179	403 071 6207	CERAMIC 220P K 50V	1
C180	403 071 6207	CERAMIC 220P K 50V	1
C181	403 143 2809	CERAMIC 0.047U Z 50V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
C182	403 143 2809	CERAMIC 0.047U Z 50V	1
C183	403 044 0300	ELECT 47U M 16V	1
C184	403 044 0300	ELECT 47U M 16V	1
C185	403 121 9509	CERAMIC 0.1U Z 50V	1
C186	403 121 9509	CERAMIC 0.1U Z 50V	1
R137	401 024 7400	CARBON 10K JA 1/6W	1
R138	401 024 7400	CARBON 10K JA 1/6W	1
R139	401 025 0004	CARBON 120K JA 1/6W	1
R140	401 024 8001	CARBON 1M JA 1/6W	1
R141	401 012 5708	CARBON 1K JA 1/4W	1
R142	401 012 5708	CARBON 1K JA 1/4W	1
R143	401 024 7707	CARBON 100K JA 1/6W	1
R144	401 024 7707	CARBON 100K JA 1/6W	1
R145	401 024 7707	CARBON 100K JA 1/6W	1
R146	401 024 7707	CARBON 100K JA 1/6W	1
R147	401 026 7408	CARBON 39K JA 1/6W	1
R148	401 026 7408	CARBON 39K JA 1/6W	1
R149	401 027 2600	CARBON 5.6K JA 1/6W	1
R150	401 027 2600	CARBON 5.6K JA 1/6W	1
R151	401 027 2600	CARBON 5.6K JA 1/6W	1
R152	401 027 2600	CARBON 5.6K JA 1/6W	1
R153	401 027 5502	CARBON 6.8K JA 1/6W	1
R154	401 027 5502	CARBON 6.8K JA 1/6W	1
R155	401 024 7004	CARBON 1K JA 1/6W	1
R156	401 024 7004	CARBON 1K JA 1/6W	1
R157	401 025 1605	CARBON 1.5K JA 1/6W	1
R158	401 025 1605	CARBON 1.5K JA 1/6W	1
R159	401 025 1605	CARBON 1.5K JA 1/6W	1
R160	401 025 1605	CARBON 1.5K JA 1/6W	1
R161	401 025 1605	CARBON 1.5K JA 1/6W	1
R162	401 025 1605	CARBON 1.5K JA 1/6W	1
R163	401 025 1605	CARBON 1.5K JA 1/6W	1
R164	401 025 1605	CARBON 1.5K JA 1/6W	1
R165	401 025 1605	CARBON 1.5K JA 1/6W	1
R166	401 014 4105	CARBON 1.5K JA 1/4W	1
R167	401 025 0004	CARBON 120K JA 1/6W	1
R168	401 025 0004	CARBON 120K JA 1/6W	1
R169	401 027 5908	CARBON 68K JA 1/6W	1
R170	401 027 5908	CARBON 68K JA 1/6W	1
R171	401 027 0309	CARBON 47K JA 1/6W	1
R172	401 027 0309	CARBON 47K JA 1/6W	1
R173	401 026 7408	CARBON 39K JA 1/6W	1
R174	401 026 7408	CARBON 39K JA 1/6W	1
R175	401 025 4606	CARBON 18K JA 1/6W	1
R176	401 025 4606	CARBON 18K JA 1/6W	1
R177	401 026 6609	CARBON 390 JA 1/6W	1
R178	401 026 6609	CARBON 390 JA 1/6W	1
R179	401 026 6609	CARBON 390 JA 1/6W	1
R180	401 026 6609	CARBON 390 JA 1/6W	1
R181	401 026 6609	CARBON 390 JA 1/6W	1
R182	401 026 6609	CARBON 390 JA 1/6W	1
R183	401 026 6609	CARBON 390 JA 1/6W	1
R184	401 026 6609	CARBON 390 JA 1/6W	1
R185	401 026 6609	CARBON 390 JA 1/6W	1
R186	401 026 6609	CARBON 390 JA 1/6W	1
R187	401 024 7400	CARBON 10K JA 1/6W	1
R188	401 024 7400	CARBON 10K JA 1/6W	1
R189	401 024 7400	CARBON 10K JA 1/6W	1
R190	401 024 7400	CARBON 10K JA 1/6W	1
R191	401 024 7400	CARBON 10K JA 1/6W	1
R192	401 024 7400	CARBON 10K JA 1/6W	1
R193	401 024 7400	CARBON 10K JA 1/6W	1
R194	401 024 7400	CARBON 10K JA 1/6W	1
R195	401 024 7400	CARBON 10K JA 1/6W	1
R196	401 024 7400	CARBON 10K JA 1/6W	1
R197	401 016 2604	CARBON 220 JA 1/4W	1
R198	401 016 2604	CARBON 220 JA 1/4W	1
ASSY,PCB,MAIN,VOLUME			
64	620 202 1492	Assy,PCB,Main,Volume	1
CN109	620 202 2987	Connector-S,52084,10P	1
VR107	620 201 8652	VR,Rotary,2X100KA,Motor	1
Assy,PCB,μ-CON			
65	620 204 8871	Assy,PCB,μ-CON	1
	620 030 8083	Lamp	3
	411 021 0809	SCR S-TPG BIN 2X6	6
	620 201 4937	Mount-E,FL,Left	1
	620 201 4944	Mount-E,FL,Right	1

Ref. No.	Part No.	Description	Q'ty
	620 198 0875	Spacer	1
	620 201 4920	Spacer,LED	1
	620 198 5313	Fluorescent Tube,8BT-75GK	1
CN201	620 202 3366	Connector-S,5224,9P	1
CN202	620 202 3366	Connector-S,5224,9P	1
CN203	620 202 3366	Connector-S,5224,9P	1
CN204	620 200 1524	Connector-S,52084,5P	1
CR201	620 202 2062	Resonator,Ceram,4.19MHz	1
CR202	620 202 2062	Resonator,Ceram,4.19MHz	1
JH201	620 201 0373	Socket,Holder,3P	1
JH202	620 201 0144	Socket,Holder,2P	1
JH203	620 201 0144	Socket,Holder,2P	1
RA201	620 004 5674	Resistor 12X10K	1
RA202	620 004 5551	Resistor 3X10K J	1
RA203	620 004 5674	Resistor 12X10K	1
RA204	620 004 5575	Resistor 4X100K J	1
RA205	620 202 2055	Resistor,7X47K,P1.778	1
RA206	620 202 2048	Resistor,9X47K,P2.54	1
RA207	620 202 2031	Resistor,8X47K,P2.54	1
SW201	620 202 2154	Switch,Tact (STATION 1)	1
SW202	620 202 2154	Switch,Tact (STATION 2)	1
SW203	620 202 2154	Switch,Tact (STATION 3)	1
SW204	620 202 2154	Switch,Tact (STATION 4)	1
SW205	620 202 2154	Switch,Tact (STATION 5)	1
SW206	620 202 2154	Switch,Tact (STATION 6)	1
SW207	620 202 2154	Switch,Tact (TUNING UP)	1
SW208	620 202 2154	Switch,Tact (TUNING DOWN)	1
SW209	620 202 2154	Switch,Tact (FM)	1
SW210	620 202 2154	Switch,Tact (MW/LW)	1
SW211	620 202 2154	Switch,Tact (AUTO/MANUAL)	1
SW212	620 202 2154	Switch,Tact (STEREO/MONO)	1
SW213	620 202 2154	Switch,Tact (SCAN LEVEL)	1
SW214	620 202 2154	Switch,Tact (PHONO)	1
SW215	620 202 2154	Switch,Tact (TUNER)	1
SW216	620 202 2154	Switch,Tact (CD)	1
SW217	620 202 2154	Switch,Tact (AUX)	1
SW218	620 202 2154	Switch,Tact (TAPE-1)	1
SW219	620 202 2154	Switch,Tact (TAPR-2)	1
SW220	620 202 2154	Switch,Tact (S-DIRECT)	1
IC201	409 162 2301	IC LC6522H-3794	1
IC202	409 114 4803	IC LB1641	1
IC203	410 060 9200	IC TMP47C441AN-1669Z	1
Q201	405 035 6704	TR 2SA1511-AC	1
Q202	405 037 0601	TR 2SC3899-AC	1
Q203	405 018 2600	TR 2SC3400-AC	1
Q204	405 037 0601	TR 2SC3899-AC	1
Q205	405 036 3306	TR 2SA1522-AC	1
Q206	405 018 2501	TR 2SC3399-AC	1
Q207	405 037 0205	TR 2SC3860-AC	1
Q208	405 004 4007	TR 2SA608-E-SPA-AC	1
or	405 004 4601	TR 2SA608-F-SPA-AC	1
Q209	405 018 2501	TR 2SC3399-AC	1
Q210	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q211	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q214	405 084 7004	TR DTC144-EL-TP	1
Q215	405 096 0000	TR DTA124-EL-TL2	1
Q216	405 018 2600	TR 2SC3400-AC	1
Q217	405 095 9806	TR DTC123-EL-TL2	1
Q218	405 095 9806	TR DTC123-EL-TL2	1
Q219	405 035 6704	TR 2SA1511-AC	1
Q220	405 008 6809	TR 2SB808-F-SPA-AC	1
or	405 008 7103	TR 2SB808-G-SPA-AC	1
Q221	405 035 6704	TR 2SA1511-AC	1
Q222	405 008 6809	TR 2SB808-F-SPA-AC	1
or	405 008 7103	TR 2SB808-G-SPA-AC	1
Q223	405 037 0601	TR 2SC3899-AC	1
Q224	405 003 7603	TR 2SA1345-AC	1
D201	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D202	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D203	407 050 3607	ZENER DIODE GZA4.7X-BT	1
or	407 050 3706	ZENER DIODE GZA4.7Y-BT	1
D204	407 005 3805	DIODE DS442-BT	1
D205	407 005 3805	DIODE DS442-BT	1
D206	407 005 3805	DIODE DS442-BT	1
D207	407 012 4208	DIODE 1SS131-T-77	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
or	407 008 0405	DIODE GMB01-BT	1
D208	407 050 6103	ZENER DIODE GZA6.2X-BT	1
or	407 050 6202	ZENER DIODE GZA6.2Y-BT	1
D209	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D210	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D211	407 005 3805	DIODE DS442-BT	1
D212	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D213	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D217	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D219	407 005 3805	DIODE DS442-BT	1
D220	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D221	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D222	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D223	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D224	407 106 5500	LED ULP-R73B-50 (PHONO)	1
D225	407 106 5500	LED ULP-R73B-50 (TUNER)	1
D226	407 106 5500	LED ULP-R73B-50 (CD)	1
D227	407 106 5500	LED ULP-R73B-50 (AUX)	1
D228	407 106 5500	LED ULP-R73B-50 (TAPE-1)	1
D229	407 106 5500	LED ULP-R73B-50 (TAPE-2)	1
D232	407 005 3805	DIODE DS442-BT	1
D233	407 005 3805	DIODE DS442-BT	1
D234	407 005 3805	DIODE DS442-BT	1
C201	403 051 2106	ELECT 4.7U M 50V	1
C202	403 038 2402	ELECT 100U M 6.3V	1
C204	403 121 9509	CERAMIC 0.1U Z 50V	1
C205	403 049 1708	ELECT 1U M 50V	1
C206	403 049 1708	ELECT 1U M 50V	1
C207	403 049 5508	ELECT 10U M 50V	1
C208	403 121 9509	CERAMIC 0.1U Z 50V	1
C209	404 039 4402	ELECT 100U M 10V	1
C210	404 039 4303	ELECT 2200U M 10V	1
C211	403 069 1207	CERAMIC 1000P K 50V	1
C212	403 121 9509	CERAMIC 0.1U Z 50V	1
C213	403 121 9509	CERAMIC 0.1U Z 50V	1
C215	403 121 9509	CERAMIC 0.1U Z 50V	1
C216	403 121 9509	CERAMIC 0.1U Z 50V	1
C218	403 001 1906	CERAMIC 0.01U M 16V	1
C219	403 038 2709	ELECT 100U M 6.3V	1
C220	403 038 2709	ELECT 100U M 6.3V	1
C221	403 050 3708	ELECT 22U M 50V	1
C222	403 073 7004	CERAMIC 470P K 50V	1
R201	401 024 7004	CARBON 1K JA 1/6W	1
R206	401 024 6700	CARBON 100 JA 1/6W	1
R207	401 024 6700	CARBON 100 JA 1/6W	1
R208	401 024 6700	CARBON 100 JA 1/6W	1
R209	401 020 2904	CARBON 47K JA 1/4W	1
R210	401 024 7707	CARBON 100K JA 1/6W	1
R211	401 012 4503	CARBON 100 JA 1/4W	1
R212	401 024 6403	CARBON 10 JA 1/6W	1
R214	401 024 7400	CARBON 10K JA 1/6W	1
R215	401 027 0507	CARBON 470K JA 1/6W	1
R216	401 022 3107	CARBON 6.8K JA 1/4W	1
R217	401 025 4606	CARBON 18K JA 1/6W	1
R218	401 027 3003	CARBON 56K JA 1/6W	1
R219	401 018 2800	CARBON 330 JA 1/4W	1
R220	401 012 5708	CARBON 1K JA 1/4W	1
R221	401 012 3407	CARBON 10 JA 1/4W	1
R222	401 015 0502	CARBON 18 JA 1/4W	1
R224	401 015 0502	CARBON 18 JA 1/4W	1
R226	401 026 9600	CARBON 470 JA 1/6W	1
R227	401 024 7400	CARBON 10K JA 1/6W	1
R228	401 024 7400	CARBON 10K JA 1/6W	1
R229	401 027 2600	CARBON 5.6K JA 1/6W	1
R230	401 027 2600	CARBON 5.6K JA 1/6W	1
R231	401 012 4503	CARBON 100 JA 1/4W	1
R232	401 012 4503	CARBON 100 JA 1/4W	1
R233	401 021 1906	CARBON 560 JA 1/4W	1
R234	401 024 7707	CARBON 100K JA 1/6W	1
R240	401 012 5708	CARBON 1K JA 1/4W	1

Ref. No.	Part No.	Description	Q'ty
R249	401 015 0502	CARBON 18 JA 1/4W	1
R254	401 026 9907	CARBON 4.7K JA 1/6W	1
R256	401 026 9907	CARBON 4.7K JA 1/6W	1
R257	401 021 4105	CARBON 56K JA 1/4W	1
R258	401 024 7400	CARBON 10K JA 1/6W	1
R260	401 027 5205	CARBON 680 JA 1/6W	1
ASSY,PCB,REMOTE CONTROL			
66	620 202 1539	Assy,PCB,Remote Control	1
	620 055 4985	Jumper	1
JH204	620 201 0373	Socket,Holder,3P	1
RX201	620 200 0909	Converter,Remote,DET	1
ASSY,PCB,STANDBY,LED			
67	620 202 1546	Assy,PCB,Standby,LED	1
JH205	620 201 0144	Socket,Holder,2P	1
W202	620 202 3090	Wire,Jumper,2P L = 100	1
D230	407 106 5500	LED ULP-R73B-50	1
ASSY,PCB,VOLUME,LED			
68	620 202 1553	Assy,PCB,Volume,LED	1
JH206	620 202 9054	Socket,Holder,2P	1
D231	407 065 5009	LED SLP-190B-51	1
ASSY,PCB,MAIN/TUNER			
69	620 202 1560	Assy,PCB,Main/Tuner	1
	620 202 1874	PCB,Tuner,Shield	1

(Component parts used in Front End are not serviceable and available.)

	620 182 6180	Frontend FM4EU W/AGC	1
	620 021 6814	Pin 1P	5
	620 022 2921	ANT Terminal 3P	1
⚠	423 003 9809	FUSE 250V 0.63A	1
⚠	423 007 2103	FUSE 250V 4A	2
	411 020 8004	SCR S-TPG BRZ 3X8	2
	620 202 3434	Fuse Holder,Taping	6
	620 202 3458	Terminal,1P	3
	620 202 3472	Terminal,Wrapper,2P	1
	620 203 7035	Terminal,3P	1
	620 050 2450	Metal Mount Antenna	2
	620 183 1054	Cover Shield Top	1
	620 183 1061	Plate Shield	1
	620 183 1146	Plate Sever	1
	620 053 8084	Plate Heat Sink	1
	620 053 9241	Plate Heat Sink	1
	620 204 5535	Assy,Wire,1P	1
CF301	620 026 6741	Mechanical Filter	1
CF302	620 014 5664	Ceramic Filter	1
CF303	620 014 6319	Ceram.OSC CSB456F11	1
CN110	620 203 4720	Connector-P,5512-NA,14P	1
CN111	620 202 3335	Connector-P,5530-NA,8P	1
CN301	620 202 3342	Connector-P,5530-NA,9P	1
CN401	620 202 3342	Connector-P,5530-NA,9P	1
CN501	620 202 3342	Connector-P,5530-NA,9P	1
CR301	620 007 1338	Crystal 7.2MHz	1
or	620 007 1314	Crystal 7.2MHz	1
F302	620 191 6607	FTZ Antenna Filter	1
or	620 026 9353	FTZ Antenna Filter	1
JH401	620 202 2208	Socket,Housing,5P	1
JH502	620 202 2222	Socket,Housing,7P	1
L301	620 197 9442	Inductor 470UH K	1
L302	620 185 9041	MW Antenna Coil	1
or	620 028 1348	MW Antenna Coil	1
L303	620 028 2901	LW Antenna Coil	1
or	620 028 1362	LW Antenna Coil	1
L304	620 185 9058	OSC Coil MW	1
or	620 190 3676	OSC Coil MW	1
or	620 028 7784	OSC Coil MW	1
L305	620 192 7481	OSC Coil LW	1
L306	620 027 7419	IFT AM 450K	1
L307	620 189 6008	IFT DET 10.7MHz 1st K	1
L308	620 189 6015	IFT DET 10.7MHz 2nd K	1
L309	620 026 4396	Anti Birdie Filter	1
L401	620 027 1240	AF Coil	1
L402	620 027 1240	AF Coil	1
TC301	620 007 0867	Trimmer 10PF	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
TC302	620 189 9108	Trimmer 20PF	1
TH401	407 109 6702	THERMISTOR 300D-5	1
TH402	407 109 6702	THERMISTOR 300D-5	1
VR301	620 202 2079	Potentiometer,10KB,TP	1
VR302	620 202 2086	Potentiometer,47KB,TP	1
VR303	620 202 2093	Potentiometer,220KB,TP	1
VR401	620 202 3830	Potentiometer,220B,TP	1
VR402	620 202 3830	Potentiometer,220B,TP	1
W301	620 017 9102	Connector 1P Assy	1
IC301	409 073 9505	IC LA1266	1
IC302	409 025 7306	IC LM7000	1
IC303	409 017 1008	IC LA3401	1
IC401	409 079 9509	IC LA2500	1
IC402	409 079 9509	IC LA2500	1
IC501	409 195 0503	IC NJM78M18FA	1
IC502	409 199 7300	IC NJM79M18FA	1
IC503	409 140 0503	IC NJM78M12FA	1
Q301	405 027 0505	TR 2SK246-GR (TPE2)	1
Q302	405 039 5802	TR 2SC3792-AA	1
Q303	405 018 2808	TR 2SC3402-AC	1
Q304	405 037 0809	TR 2SC4048-AC	1
Q305	405 021 0907	TR 2SD1012-H-SPA-AC	1
Q306	405 018 2501	TR 2SC3399-AC	1
Q307	405 027 8402	TR 2SK583	1
Q308	405 027 8402	TR 2SK583	1
Q309	405 003 7603	TR 2SA1345-AC	1
Q310	405 003 7702	TR 2SA1346-AC	1
Q311	405 018 2501	TR 2SC3399-AC	1
Q312	405 060 9404	TR 2SA1590-AC	1
Q313	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q314	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q315	405 036 3306	TR 2SA1522-AC	1
Q316	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q317	405 018 2501	TR 2SC3399-AC	1
Q401	405 016 8901	TR 2SC3066-F	1
or	405 016 9007	TR 2SC3066-G	1
Q402	405 016 8901	TR 2SC3066-F	1
or	405 016 9007	TR 2SC3066-G	1
Q403	405 002 9103	TR 2SA1209-S	1
or	405 002 9202	TR 2SA1209-T	1
Q404	405 002 9103	TR 2SA1209-S	1
or	405 002 9202	TR 2SA1209-T	1
Q405	405 016 3906	TR 2SC2911-S	1
or	405 016 4002	TR 2SC2911-T	1
Q406	405 016 3906	TR 2SC2911-S	1
or	405 016 4002	TR 2SC2911-T	1
Q409	405 017 2601	TR 2SC3117-S	1
or	405 017 2700	TR 2SC3117-T	1
Q410	405 017 2601	TR 2SC3117-S	1
or	405 017 2700	TR 2SC3117-T	1
Q411	405 003 1601	TR 2SA1249-S	1
or	405 003 1700	TR 2SA1249-T	1
Q412	405 003 1601	TR 2SA1249-S	1
or	405 003 1700	TR 2SA1249-T	1
Q417	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q418	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q419	405 004 4007	TR 2SA608-E-SPA-AC	1
or	405 004 4601	TR 2SA608-F-SPA-AC	1
Q420	405 004 4007	TR 2SA608-E-SPA-AC	1
or	405 004 4601	TR 2SA608-F-SPA-AC	1
Q421	405 013 7204	TR 2SC2274K-E-AA	1
or	405 013 7303	TR 2SC2274K-F-AA	1
Q422	405 006 7006	TR 2SA984K-E-AA	1
or	405 006 7204	TR 2SA984K-F-AA	1
Q423	405 018 2808	TR 2SC3402-AC	1
Q424	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q425	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q426	405 003 7900	TR 2SA1348-AC	1
Q427	405 018 2501	TR 2SC3399-AC	1
Q428	405 018 2808	TR 2SC3402-AC	1
Q503	405 035 7107	TR 2SD1913-R	1
or	405 035 7206	TR 2SD1913-S	1
Q504	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q505	405 007 5100	TR 2SB560-E-MP	1
or	405 007 5308	TR 2SB560-F-MP	1
Q506	405 006 7006	TR 2SA984K-E-AA	1
or	405 006 7204	TR 2SA984K-F-AA	1

If necessary, replace both Diode D301, D302 (SVC321) together with new ones which have the equivalent characteristics.

D301	407 000 4708	VARACTOR DI SVC321C-2	1
or	407 000 4807	VARACTOR DI SVC321D-2	1
D302	407 000 4708	VARACTOR DI SVC321C-2	1
or	407 000 4807	VARACTOR DI SVC321D-2	1
D303	407 012 4208	DIODE 1SS131-T-77	1
or	407 077 0504	DIODE 1SS133-K	1
D304	407 012 4208	DIODE 1SS131-T-77	1
or	407 077 0504	DIODE 1SS133-K	1
D305	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D306	407 012 4208	DIODE 1SS131-T-77	1
or	407 077 0504	DIODE 1SS133-K	1
D307	407 012 4208	DIODE 1SS131-T-77	1
or	407 077 0504	DIODE 1SS133-K	1
D308	407 005 3805	DIODE DS442-BT	1
D309	407 049 8101	ZENER DIODE GZA2.0X-BT	1
or	407 049 8309	ZENER DIODE GZA2.0Z-BT	1
D311	407 005 3805	DIODE DS442-BT	1
D401	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D402	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D403	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D404	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D405	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D406	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D407	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D408	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D409	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D410	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D411	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D412	407 012 4208	DIODE 1SS131-T-77	1
or	407 008 0405	DIODE GMB01-BT	1
D413	407 051 5105	ZENER DIODE GZS20X-BT	1
or	407 051 5204	ZENER DIODE GZS20Y-BT	1
D507	407 092 4105	DIODE DSA20TC-KD3	1
D508	407 092 4105	DIODE DSA20TC-KD3	1
D509	407 092 4105	DIODE DSA20TC-KD3	1
D510	407 092 4105	DIODE DSA20TC-KD3	1
D511	407 070 1904	ZENER DIODE GZS16Y	1
or	407 070 2000	ZENER DIODE GZS16Z	1
D512	407 050 4703	ZENER DIODE GZA5.1X-BT	1
or	407 050 4802	ZENER DIODE GZA5.1Y-BT	1
D513	407 050 0101	ZENER DIODE GZA24Y-BT	1
or	407 050 0200	ZENER DIODE GZA24Z-BT	1
D514	407 088 6502	DIODE MPG06D-PKG3	1
D515	407 088 6502	DIODE MPG06D-PKG3	1
D516	407 088 6502	DIODE MPG06D-PKG3	1
D517	407 088 6502	DIODE MPG06D-PKG3	1
D518	407 051 7109	ZENER DIODE GZS6.2X-BT	1
or	407 051 7208	ZENER DIODE GZS6.2Y-BT	1
C301	403 143 2809	CERAMIC 0.047U Z 50V	1
C302	403 026 2209	CERAMIC 47P J 50V	1
C303	403 143 2809	CERAMIC 0.047U Z 50V	1
C304	403 143 2809	CERAMIC 0.047U Z 50V	1
C306	403 121 9509	CERAMIC 0.1U Z 50V	1
C307	403 042 3600	ELECT 100U M 16V	1
C309	403 121 9509	CERAMIC 0.1U Z 50V	1
C310	403 143 2809	CERAMIC 0.047U Z 50V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C311	403 001 1906	CERAMIC	0.01U	M	16V	1
C312	403 042 3600	ELECT	100U	M	16V	1
C313	403 043 1100	ELECT	220U	M	16V	1
C314	403 001 1906	CERAMIC	0.01U	M	16V	1
C316	403 049 1708	ELECT	1U	M	50V	1
C317	403 143 2809	CERAMIC	0.047U	Z	50V	1
C318	403 143 2809	CERAMIC	0.047U	Z	50V	1
C319	403 001 1906	CERAMIC	0.01U	M	16V	1
C320	403 038 7209	ELECT	220U	M	6.3V	1
C321	403 143 2809	CERAMIC	0.047U	Z	50V	1
C322	403 088 4104	STYRENE	430P	J	50V	1
C323	403 014 2600	CERAMIC	18P	J	50V	1
C324	403 030 6309	CERAMIC	68P	J	50V	1
C325	403 143 2809	CERAMIC	0.047U	Z	50V	1
C326	403 143 2809	CERAMIC	0.047U	Z	50V	1
C327	403 088 1103	STYRENE	330P	J	50V	1
C328	403 049 5508	ELECT	10U	M	50V	1
C329	403 031 3901	CERAMIC	7P	C	50V	1
C330	403 024 1501	CERAMIC	39P	J	50V	1
C331	403 051 2106	ELECT	4.7U	M	50V	1
C332	403 051 2106	ELECT	4.7U	M	50V	1
C333	403 001 1906	CERAMIC	0.01U	M	16V	1
C334	403 049 1708	ELECT	1U	M	50V	1
C335	403 001 1906	CERAMIC	0.01U	M	16V	1
C336	403 050 7805	ELECT	3.3U	M	50V	1
C337	403 001 6802	CERAMIC	3300P	N	16V	1
C338	403 050 1308	ELECT	2.2U	M	50V	1
C339	403 069 1207	CERAMIC	1000P	K	50V	1
C340	403 069 1207	CERAMIC	1000P	K	50V	1
C341	403 049 1708	ELECT	1U	M	50V	1
C342	403 069 1207	CERAMIC	1000P	K	50V	1
C343	403 043 1100	ELECT	220U	M	16V	1
C344	403 026 2407	CERAMIC	47P	J	50V	1
C345	403 069 1504	CERAMIC	1000P	K	50V	1
C346	403 069 1504	CERAMIC	1000P	K	50V	1
C347	403 069 1504	CERAMIC	1000P	K	50V	1
C348	403 068 9402	CERAMIC	100P	K	50V	1
C349	403 001 1906	CERAMIC	0.01U	M	16V	1
C350	403 038 7209	ELECT	220U	M	6.3V	1
C351	403 022 5907	CERAMIC	33P	J	50V	1
C352	403 022 5907	CERAMIC	33P	J	50V	1
C354	403 001 1906	CERAMIC	0.01U	M	16V	1
C355	403 060 8700	POLYESTER	0.033U	K	50V	1
C356	403 073 3204	CERAMIC	390P	K	50V	1
C357	403 044 0300	ELECT	47U	M	16V	1
C358	403 071 6207	CERAMIC	220P	K	50V	1
C359	403 001 9100	CERAMIC	6800P	N	16V	1
C360	403 075 4506	CERAMIC	820P	K	50V	1
C361	403 067 7706	MT-COMPO	0.047U	J	50V	1
C362	403 069 1504	CERAMIC	1000P	K	50V	1
C363	403 049 5508	ELECT	10U	M	50V	1
C364	403 044 0300	ELECT	47U	M	16V	1
C366	403 049 1708	ELECT	1U	M	50V	1
C367	403 048 7701	ELECT	0.47U	M	50V	1
C368	403 049 1708	ELECT	1U	M	50V	1
C369	403 001 1906	CERAMIC	0.01U	M	16V	1
C370	403 143 2809	CERAMIC	0.047U	Z	50V	1
C371	403 072 4707	CERAMIC	270P	K	50V	1
C372	403 072 4707	CERAMIC	270P	K	50V	1
C373	403 050 1308	ELECT	2.2U	M	50V	1
C374	403 050 1308	ELECT	2.2U	M	50V	1
C375	403 001 6802	CERAMIC	3300P	N	16V	1
C376	403 001 6802	CERAMIC	3300P	N	16V	1
C377	403 001 1906	CERAMIC	0.01U	M	16V	1
C378	403 018 6109	CERAMIC	220P	J	50V	1
C379	403 002 2902	CERAMIC	0.01U	M	25V	1
C401	403 049 1708	ELECT	1U	M	50V	1
C402	403 049 1708	ELECT	1U	M	50V	1
C403	403 071 6207	CERAMIC	220P	K	50V	1
C404	403 071 6207	CERAMIC	220P	K	50V	1
C405	403 071 6207	CERAMIC	220P	K	50V	1
C406	403 071 6207	CERAMIC	220P	K	50V	1
C407	403 050 3708	ELECT	22U	M	50V	1
C408	403 050 3708	ELECT	22U	M	50V	1
C409	403 016 2004	CERAMIC	2.2P	K	50V	1
C410	403 016 2004	CERAMIC	2.2P	K	50V	1
C413	403 035 2207	CERAMIC	15P	K	500V	1
C414	403 035 2207	CERAMIC	15P	K	500V	1
C415	403 121 0506	ELECT	22U	M	63V	1
C416	403 121 0506	ELECT	22U	M	63V	1
C417	403 121 0506	ELECT	22U	M	63V	1
C418	403 121 0506	ELECT	22U	M	63V	1
C419	403 016 2004	CERAMIC	2.2P	K	50V	1
C420	403 016 2004	CERAMIC	2.2P	K	50V	1
C421	403 121 9509	CERAMIC	0.1U	Z	50V	1
C422	403 121 9509	CERAMIC	0.1U	Z	50V	1
C423	403 036 2503	CERAMIC	47P	K	500V	1
C424	403 036 2503	CERAMIC	47P	K	500V	1
C425	403 035 7103	CERAMIC	220P	K	500V	1
C426	403 035 7103	CERAMIC	220P	K	500V	1
C427	403 049 1708	ELECT	1U	M	50V	1
C428	403 049 1708	ELECT	1U	M	50V	1
C429	403 049 1708	ELECT	1U	M	50V	1
C430	403 049 1708	ELECT	1U	M	50V	1
C431	403 143 2809	CERAMIC	0.047U	Z	50V	1
C432	403 143 2809	CERAMIC	0.047U	Z	50V	1
C433	403 045 9104	ELECT	220U	M	25V	1
C434	403 039 4504	ELECT	470U	M	6.3V	1
C435	403 044 0300	ELECT	47U	M	16V	1
C443	403 038 7209	ELECT	220U	M	6.3V	1
C444	403 038 7209	ELECT	220U	M	6.3V	1
C506	404 012 6904	CERAMIC	0.047U	Z	150V	1
C507	620 202 3441	Capacitor,4700U,55V				1
C508	620 202 3441	Capacitor,4700U,55V				1
C509	403 047 4305	ELECT	47U	M	25V	1
C510	403 047 4305	ELECT	47U	M	25V	1
C511	403 047 4305	ELECT	47U	M	25V	1
C512	403 042 6205	ELECT	1000U	M	16V	1
C513	403 044 0300	ELECT	47U	M	16V	1
C514	403 038 7209	ELECT	220U	M	6.3V	1
C515	403 050 3708	ELECT	22U	M	50V	1
C516	403 052 8107	ELECT	100U	M	35V	1
C517	403 143 2809	CERAMIC	0.047U	Z	50V	1
C518	403 047 6309	ELECT	470U	M	25V	1
C519	403 042 3600	ELECT	100U	M	16V	1
C520	403 038 2402	ELECT	100U	M	6.3V	1
C521	403 121 9509	CERAMIC	0.1U	Z	50V	1
C522	403 121 9509	CERAMIC	0.1U	Z	50V	1
C524	403 143 2809	CERAMIC	0.047U	Z	50V	1
C525	403 002 2902	CERAMIC	0.01U	M	25V	1
C526	404 012 6904	CERAMIC	0.047U	Z	150V	1
R301	401 018 3807	CARBON	3.3K	JA	1/4W	1
R303	401 012 8105	CARBON	100K	JA	1/4W	1
R304	401 024 7004	CARBON	1K	JA	1/6W	1
R305	401 027 0507	CARBON	470K	JA	1/6W	1
R306	401 026 1000	CARBON	2.7K	JA	1/6W	1
R307	401 026 9600	CARBON	470	JA	1/6W	1
R308	401 012 5708	CARBON	1K	JA	1/4W	1
R309	401 027 2600	CARBON	5.6K	JA	1/6W	1
R310	401 019 9204	CARBON	47	JA	1/4W	1
R311	401 024 7707	CARBON	100K	JA	1/6W	1
R312	401 024 7707	CARBON	100K	JA	1/6W	1
R314	401 019 9204	CARBON	47	JA	1/4W	1
R315	401 026 4308	CARBON	3.3K	JA	1/6W	1
R316	401 016 1102	CARBON	22	JA	1/4W	1
R317	401 024 7400	CARBON	10K	JA	1/6W	1
R318	401 026 2908	CARBON	3K	JA	1/6W	1
R319	401 025 8208	CARBON	22K	JA	1/6W	1
R320	401 024 7400	CARBON	10K	JA	1/6W	1
R321	401 024 7400	CARBON	10K	JA	1/6W	1
R322	401 026 3905	CARBON	330	JA	1/6W	1
R323	401 026 3905	CARBON	330	JA	1/6W	1
R324	401 026 1307	CARBON	27K	JA	1/6W	1
R325	401 027 2600	CARBON	5.6K	JA	1/6W	1
R326	401 026 9907	CARBON	4.7K	JA	1/6W	1
R327	401 024 6700	CARBON	100	JA	1/6W	1
R328	401 012 8105	CARBON	100K	JA	1/4W	1
R329	401 024 7707	CARBON	100K	JA	1/6W	1
R330	401 024 7004	CARBON	1K	JA	1/6W	1
R332	401 027 2600	CARBON	5.6K	JA	1/6W	1
R333	401 025 7409	CARBON	220	JA	1/6W	1
R334	401 024 7004	CARBON	1K	JA	1/6W	1
R335	401 024 7707	CARBON	100K	JA	1/6W	1
R336	401 027 5502	CARBON	6.8K	JA	1/6W	1
R337	401 025 4606	CARBON	18K	JA	1/6W	1
R338	401 025 1605	CARBON	1.5K	JA	1/6W	1
R339	401 026 4308	CARBON	3.3K	JA	1/6W	1
R340	401 026 7002	CARBON	3.9K	JA	1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R341	401 026 1000	CARBON 2.7K JA 1/6W	1
R342	401 025 7805	CARBON 2.2K JA 1/6W	1
R343	401 024 7004	CARBON 1K JA 1/6W	1
R344	401 024 7004	CARBON 1K JA 1/6W	1
R345	401 026 4308	CARBON 3.3K JA 1/6W	1
R346	401 026 7002	CARBON 3.9K JA 1/6W	1
R347	401 024 7004	CARBON 1K JA 1/6W	1
R348	401 024 7004	CARBON 1K JA 1/6W	1
R349	401 019 9600	CARBON 47 JA 1/4W	1
R350	401 024 7400	CARBON 10K JA 1/6W	1
R351	401 024 7400	CARBON 10K JA 1/6W	1
R352	401 012 8105	CARBON 100K JA 1/4W	1
R353	401 024 7004	CARBON 1K JA 1/6W	1
R354	401 024 7400	CARBON 10K JA 1/6W	1
R355	401 024 7400	CARBON 10K JA 1/6W	1
R356	401 024 7400	CARBON 10K JA 1/6W	1
R357	401 024 7400	CARBON 10K JA 1/6W	1
R358	401 021 3009	CARBON 5.6K JA 1/4W	1
R359	401 026 4308	CARBON 3.3K JA 1/6W	1
R360	401 016 1102	CARBON 22 JA 1/4W	1
R361	401 026 4308	CARBON 3.3K JA 1/6W	1
R362	401 024 7707	CARBON 100K JA 1/6W	1
R364	401 025 8208	CARBON 22K JA 1/6W	1
R365	401 014 5201	CARBON 15K JA 1/4W	1
R367	401 024 7400	CARBON 10K JA 1/6W	1
R368	401 024 7400	CARBON 10K JA 1/6W	1
R369	401 025 4903	CARBON 180K JA 1/6W	1
R370	401 025 4903	CARBON 180K JA 1/6W	1
R371	401 025 4903	CARBON 180K JA 1/6W	1
R372	401 025 4903	CARBON 180K JA 1/6W	1
R373	401 025 7805	CARBON 2.2K JA 1/6W	1
R374	401 025 7805	CARBON 2.2K JA 1/6W	1
R375	401 027 2600	CARBON 5.6K JA 1/6W	1
R376	401 027 2600	CARBON 5.6K JA 1/6W	1
R377	401 024 7004	CARBON 1K JA 1/6W	1
R378	401 024 7004	CARBON 1K JA 1/6W	1
R379	401 025 7805	CARBON 2.2K JA 1/6W	1
R380	401 025 7805	CARBON 2.2K JA 1/6W	1
R381	401 026 1000	CARBON 2.7K JA 1/6W	1
R382	401 019 1901	CARBON 3.9K JA 1/4W	1
R384	401 018 3807	CARBON 3.3K JA 1/4W	1
R385	401 020 2003	CARBON 4.7K JA 1/4W	1
R386	401 020 0801	CARBON 470 JA 1/4W	1
R387	401 012 5708	CARBON 1K JA 1/4W	1
R389	401 027 0309	CARBON 47K JA 1/6W	1
R390	401 025 8208	CARBON 22K JA 1/6W	1
R391	401 020 0801	CARBON 470 JA 1/4W	1
R392	401 013 4205	CARBON 120 JA 1/4W	1
R393	401 016 1508	CARBON 22 JA 1/4W	1
R401	401 024 7707	CARBON 100K JA 1/6W	1
R402	401 024 7707	CARBON 100K JA 1/6W	1
R403	401 024 7707	CARBON 100K JA 1/6W	1
R404	401 024 7707	CARBON 100K JA 1/6W	1
R405	401 027 4000	CARBON 620 JA 1/6W	1
R406	401 027 4000	CARBON 620 JA 1/6W	1
R407	401 024 7707	CARBON 100K JA 1/6W	1
R408	401 024 7707	CARBON 100K JA 1/6W	1
R409	401 025 7805	CARBON 2.2K JA 1/6W	1
R410	401 025 7805	CARBON 2.2K JA 1/6W	1
R411	401 025 7805	CARBON 2.2K JA 1/6W	1
R412	401 025 7805	CARBON 2.2K JA 1/6W	1
R413	401 014 5201	CARBON 15K JA 1/4W	1
R414	401 014 5201	CARBON 15K JA 1/4W	1
R415	402 037 6909	FUSIBLE RES 82 JA 1/4W	1
R416	402 037 6909	FUSIBLE RES 82 JA 1/4W	1
R417	402 037 6909	FUSIBLE RES 82 JA 1/4W	1
R418	402 037 6909	FUSIBLE RES 82 JA 1/4W	1
R419	401 018 4903	CARBON 33K JA 1/4W	1
R420	401 018 4903	CARBON 33K JA 1/4W	1
R421	402 037 7005	FUSIBLE RES 47 JA 1/4W	1
R422	402 037 7005	FUSIBLE RES 47 JA 1/4W	1
R423	402 037 7005	FUSIBLE RES 47 JA 1/4W	1
R424	402 037 7005	FUSIBLE RES 47 JA 1/4W	1
R425	401 019 9600	CARBON 47 JA 1/4W	1
R426	401 019 9600	CARBON 47 JA 1/4W	1
R427	401 019 9600	CARBON 47 JA 1/4W	1
R428	401 019 9600	CARBON 47 JA 1/4W	1
R429	401 024 6700	CARBON 100 JA 1/6W	1
R430	401 024 6700	CARBON 100 JA 1/6W	1

Ref. No.	Part No.	Description	Q'ty
R431	401 026 3905	CARBON 330 JA 1/6W	1
R432	401 026 3905	CARBON 330 JA 1/6W	1
R433	402 037 7203	FUSIBLE RES 330 JA 1/4W	1
R434	402 037 7203	FUSIBLE RES 330 JA 1/4W	1
R435	402 037 7104	FUSIBLE RES 2.2 JA 1/4W	1
R436	402 037 7104	FUSIBLE RES 2.2 JA 1/4W	1
R437	402 037 7104	FUSIBLE RES 2.2 JA 1/4W	1
R438	402 037 7104	FUSIBLE RES 2.2 JA 1/4W	1
R439	401 153 3403	OXIDE-MT 0.33 JB 2W	1
R440	401 153 3403	OXIDE-MT 0.33 JB 2W	1
R441	401 153 3403	OXIDE-MT 0.33 JB 2W	1
R442	401 153 3403	OXIDE-MT 0.33 JB 2W	1
R443	401 018 2800	CARBON 330 JA 1/4W	1
R444	401 018 2800	CARBON 330 JA 1/4W	1
R445	401 018 2800	CARBON 330 JA 1/4W	1
R446	401 018 2800	CARBON 330 JA 1/4W	1
R447	401 022 3107	CARBON 6.8K JA 1/4W	1
R448	401 022 3107	CARBON 6.8K JA 1/4W	1
R449	401 022 3107	CARBON 6.8K JA 1/4W	1
R450	401 022 3107	CARBON 6.8K JA 1/4W	1
R451	402 040 6101	OXIDE-MT 10 JB 1/2W	1
R452	402 040 6101	OXIDE-MT 10 JB 1/2W	1
R453	401 019 9600	CARBON 47 JA 1/4W	1
R454	401 019 9600	CARBON 47 JA 1/4W	1
R455	401 020 2003	CARBON 4.7K JA 1/4W	1
R456	401 027 0309	CARBON 47K JA 1/6W	1
R457	401 027 0309	CARBON 47K JA 1/6W	1
R458	401 024 7400	CARBON 10K JA 1/6W	1
R459	401 024 7400	CARBON 10K JA 1/6W	1
R460	401 013 6407	CARBON 12K JA 1/4W	1
R461	401 021 4105	CARBON 56K JA 1/4W	1
R462	401 021 4105	CARBON 56K JA 1/4W	1
R464	401 027 0309	CARBON 47K JA 1/6W	1
R504	402 039 9205	OXIDE-MT 470 JB 1W	1
R505	402 039 9205	OXIDE-MT 470 JB 1W	1
R506	402 040 2301	OXIDE-MT 68 JB 2W	1
R507	402 040 2301	OXIDE-MT 68 JB 2W	1
R508	401 021 3009	CARBON 5.6K JA 1/4W	1
R509	401 012 5708	CARBON 1K JA 1/4W	1
R510	402 039 9403	OXIDE-MT 330 JB 1W	1
R511	401 018 3807	CARBON 3.3K JA 1/4W	1
R512	401 025 8208	CARBON 22K JA 1/6W	1
R514	401 016 2604	CARBON 220 JA 1/4W	1
R515	401 027 0309	CARBON 47K JA 1/6W	1
R516	401 027 0309	CARBON 47K JA 1/6W	1
R517	402 039 3203	FUSIBLE RES 33 JA 1/4W	1
ASSY,PCB,SUB,TRANS			
70	620 202 1577	Assy,PCB,Sub,Trans	1
	620 022 2587	EC Terminal 1P	2
⚠	423 006 4702	FUSE 250V 2.5A	1
	620 202 3434	Fuse Holder,Taping	2
	620 202 3489	Terminal,Wrapper,4P	1
	620 202 4196	Terminal,Wrapper,3P	1
	620 053 6905	Cover Safety	1
C501 ⚠	620 006 6679	Capacitor 0.01MF400V	1
RE501 ⚠	620 202 2130	Relay,Power,1P-1T,TV-5	1
Q501	405 019 2005	TR 2SC536-E-SPA-AC	1
or	405 019 2807	TR 2SC536-F-SPA-AC	1
Q502	405 018 2808	TR 2SC3402-AC	1
D501	407 088 6502	DIODE MPG06D-PKG3	1
D502	407 088 6502	DIODE MPG06D-PKG3	1
D503	407 088 6502	DIODE MPG06D-PKG3	1
D504	407 088 6502	DIODE MPG06D-PKG3	1
D505	407 051 7307	ZENER DIODE GZS6.2Z-BT	1
or	407 051 7406	ZENER DIODE GZS6.8X-BT	1
D506	407 088 6502	DIODE MPG06D-PKG3	1
C502	403 143 2809	CERAMIC 0.047U Z 50V	1
C503	403 043 7102	ELECT 330U M 16V	1
C504	403 044 0300	ELECT 47U M 16V	1
C505	403 038 7209	ELECT 220U M 6.3V	1
R501	401 014 1609	CARBON 15 JA 1/4W	1
R502	401 014 1609	CARBON 15 JA 1/4W	1
R503	401 021 1906	CARBON 560 JA 1/4W	1
ASSY,PCB,AC,OUTLET			
71	620 202 1584	Assy,PCB,AC,Outlet	1
	620 202 4202	Terminal,Wrapper,2P	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
ASSY,PCB,MAIN,TRANS			
72	620 202 1591	Assy,PCB,Main,Trans	1
JH501	620 202 2222	Socket,Housing,7P	1
W501	620 202 4189	Wire,Jumper,7P L = 150	1
ASSY,PCB,POWER SWITCH			
73	620 202 1607	Assy,PCB,Power Switch	1
	620 185 1946	Jack 3P	1
	620 202 3472	Terminal,Wrapper,2P	1
	620 050 2450	Metal Mount Antenna	1
JH402	620 202 2208	Socket,Housing,5P	1
JH403	620 202 2215	Socket,Housing,6P	1
SW401	620 188 8393	Push 1KEY (SP-A)	1
SW402	620 188 8393	Push 1KEY (SP-B)	1
SW501⚠	620 015 2341	Switch Push Power	1
W401	620 202 4165	Wire,Jumper,5P L = 220	1
C445	403 143 2809	CERAMIC 0.047U Z 50V	1
R465	402 039 6006	OXIDE-MT 390 JB 2W	1
R466	402 039 6006	OXIDE-MT 390 JB 2W	1
R467	401 016 7500	CARBON 240 JA 1/4W	1
R468	401 016 7500	CARBON 240 JA 1/4W	1
R469	401 016 7500	CARBON 240 JA 1/4W	1
R470	401 016 7500	CARBON 240 JA 1/4W	1

Ref. No.	Part No.	Description	Q'ty
ASSY,PCB,SPEAKER,TERMINAL			
74	620 202 1614	Assy,PCB,Speaker,Terminal	1
	620 185 1953	Push Terminal 8P	1
JH404	620 202 2215	Socket,Housing,6P	1
W402	620 202 4172	Wire,Jumper,6P L = 280	1
C437	403 069 1504	CERAMIC 1000P K 50V	1
C438	403 069 1207	CERAMIC 1000P K 50V	1
C439	403 069 1207	CERAMIC 1000P K 50V	1
C440	403 069 1504	CERAMIC 1000P K 50V	1

NOTES:

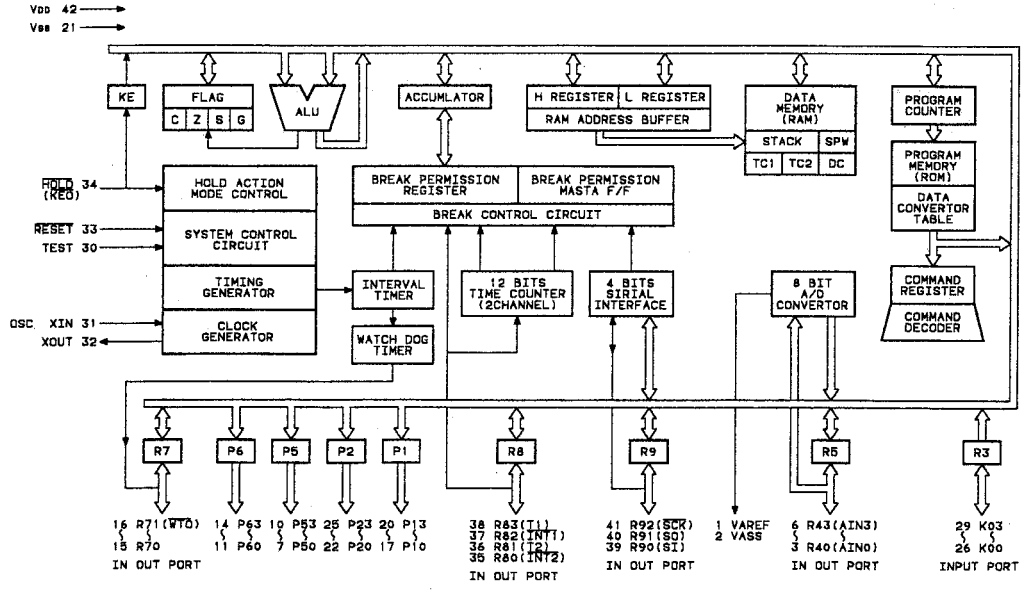
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

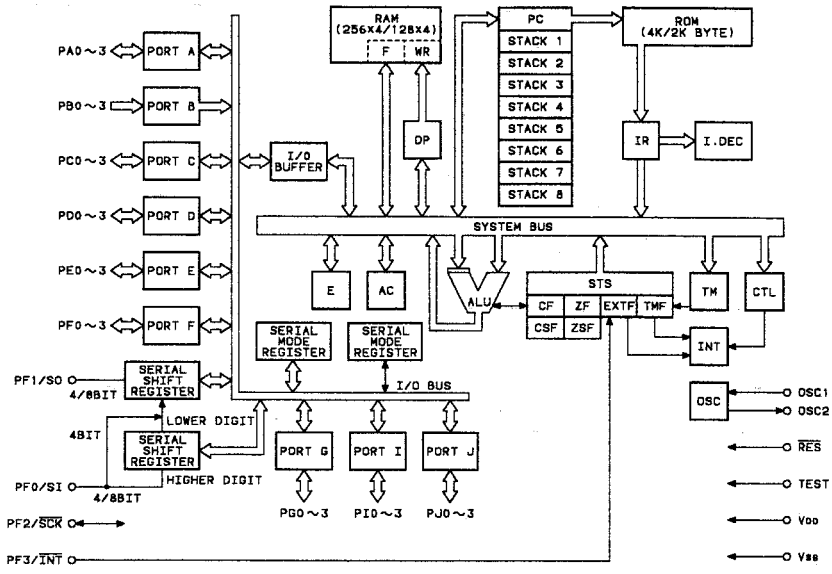
IC BLOCK DIAGRAM

TMP47C441AN-1669Z BLOCK DIAGRAM

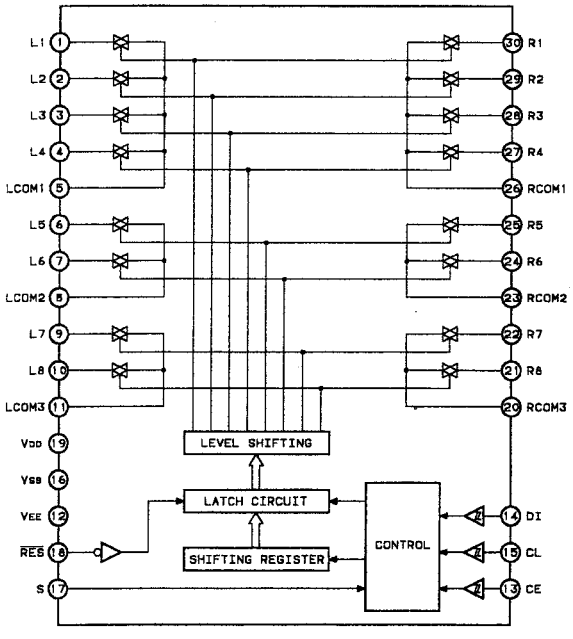


IC BLOCK DIAGRAM (Continued)

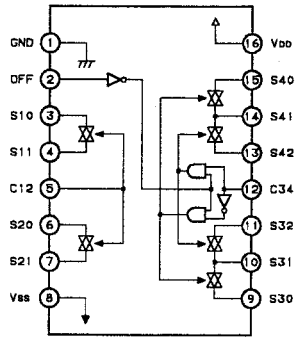
LC6522H-3794 BLOCK DIAGRAM



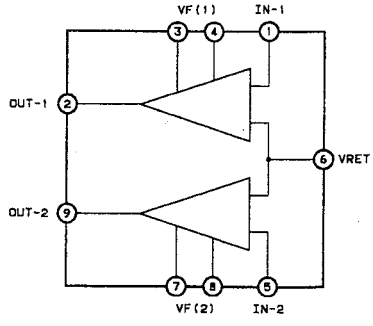
LC7821 BLOCK DIAGRAM



TC9215P BLOCK DIAGRAM

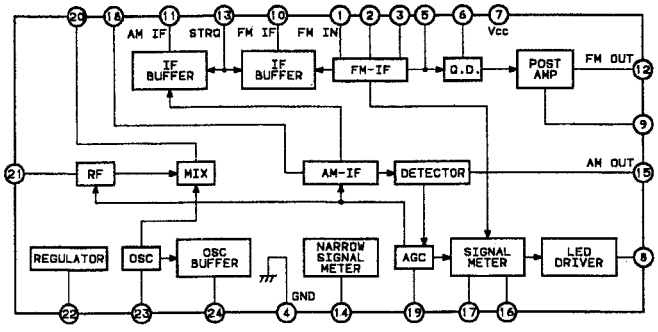


LA2500 BLOCK DIAGRAM

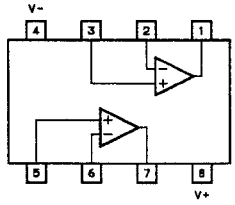


IC BLOCK DIAGRAM (Continued)

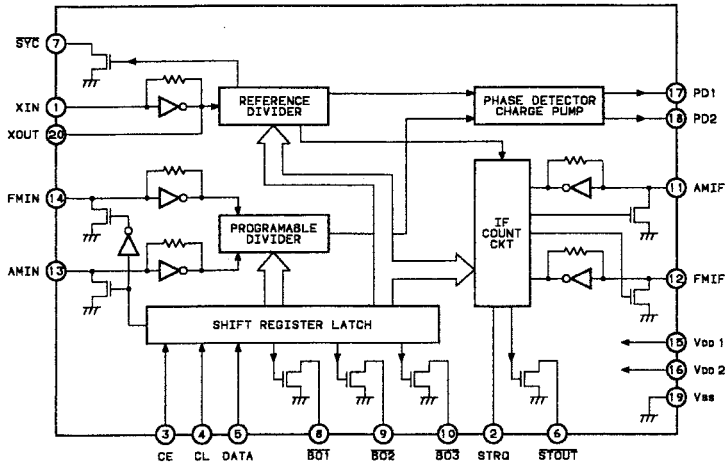
LA1266 BLOCK DIAGRAM



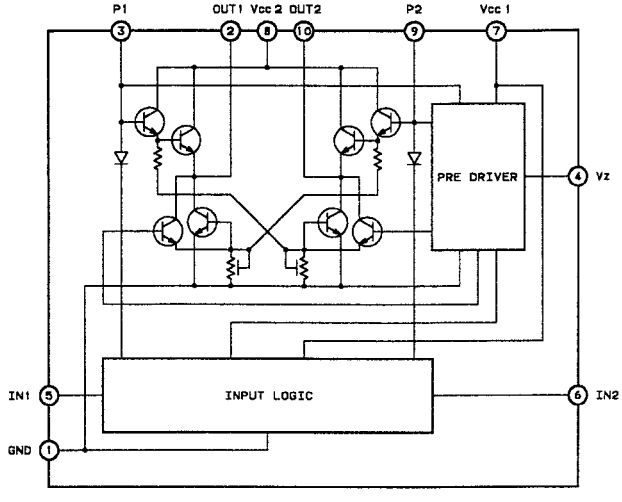
UPC4570C BLOCK DIAGRAM
RC4558 BLOCK DIAGRAM



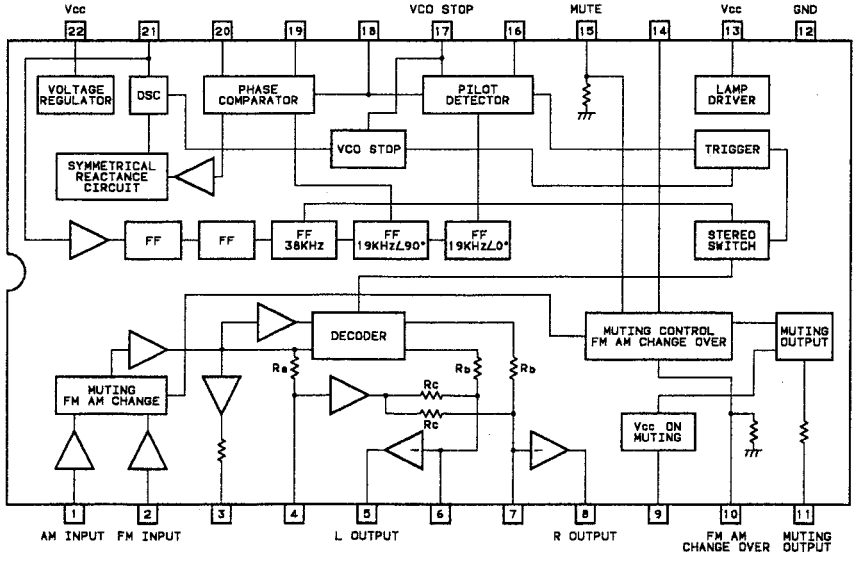
LM7000 BLOCK DIAGRAM



LB1641 BLOCK DIAGRAM

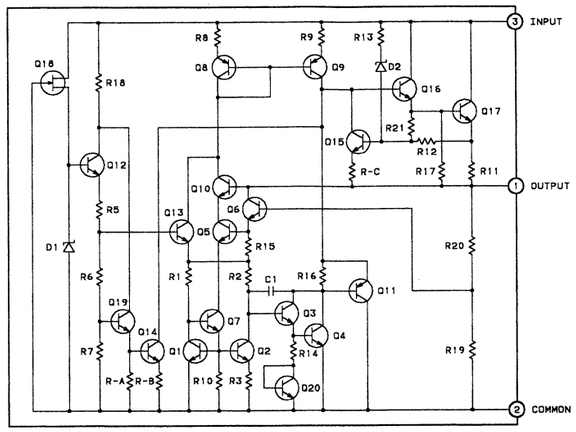


LA3401 BLOCK DIAGRAM

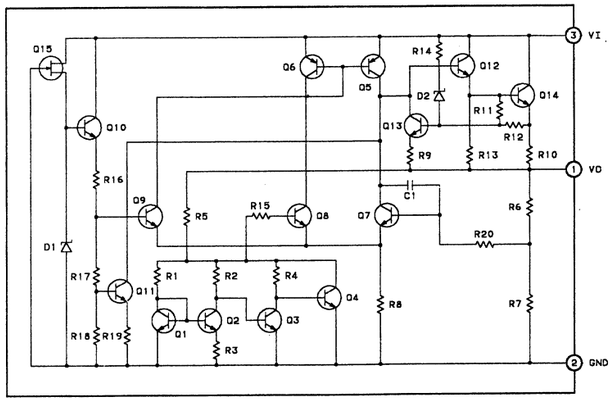


IC BLOCK DIAGRAM (Continued)

NJM78M12FA BLOCK DIAGRAM



NJM78M18FA BLOCK DIAGRAM



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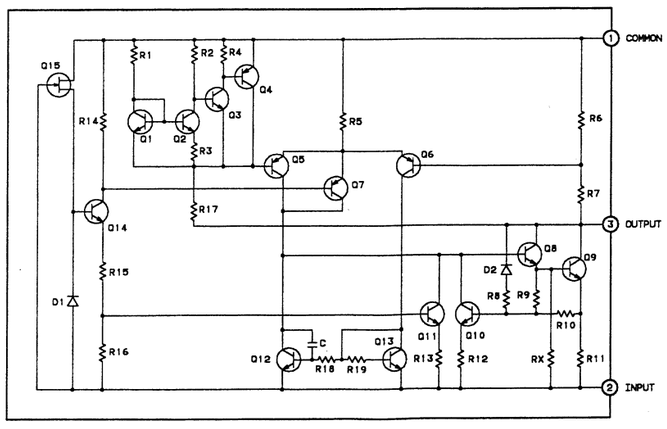
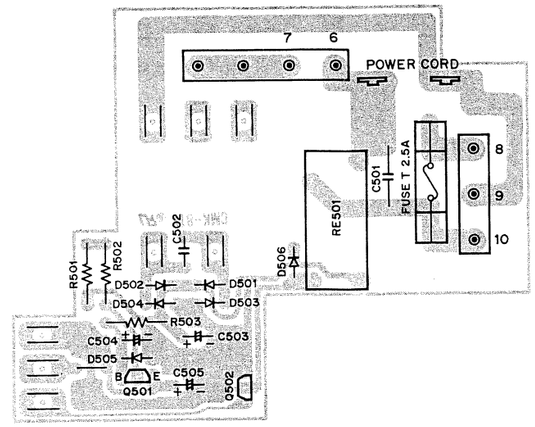
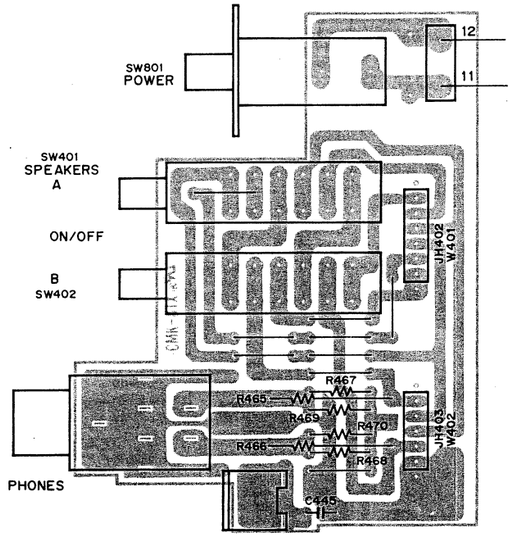


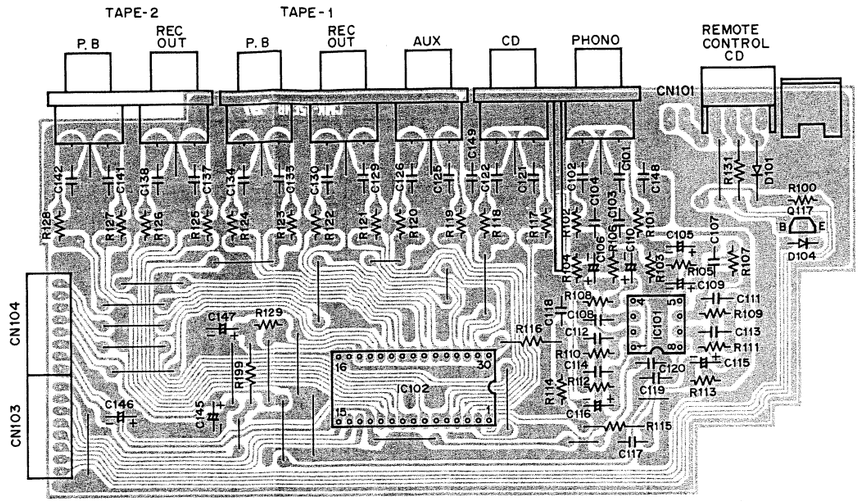
SUB TRANS P.C.BOARD
(BOTTOM VIEW)



POWER SW. P.C.BOARD
(BOTTOM VIEW)



INPUT P.C.BOARD
(BOTTOM VIEW)

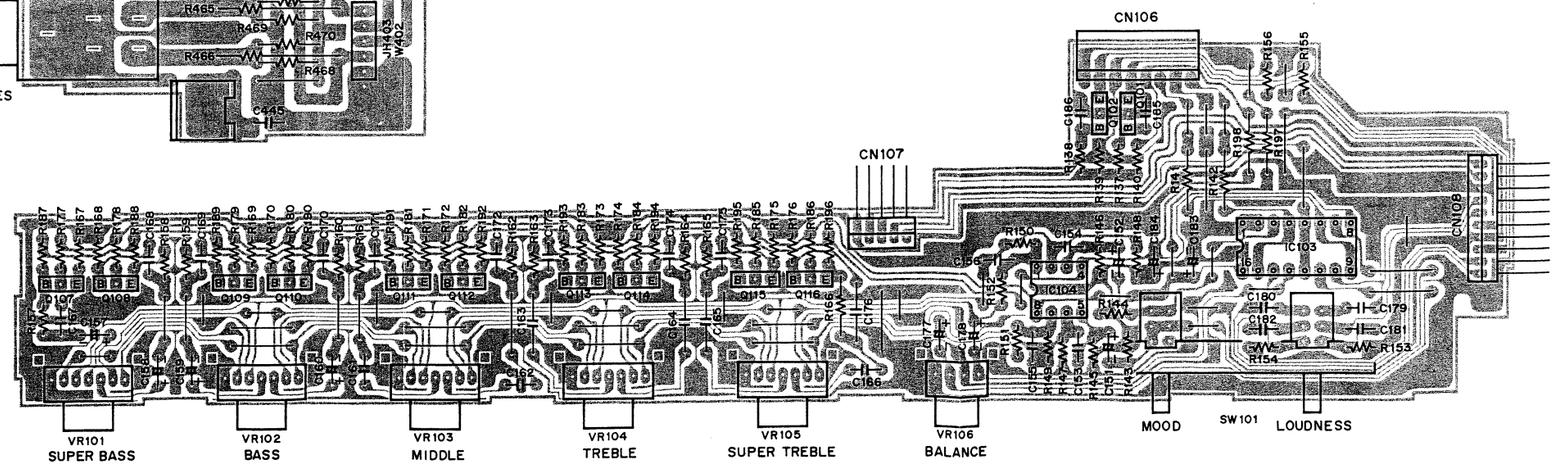


TRANSISTOR DC VOLTAGES				
Ref. No.	DEVICE	B	C	E
Q117	2SC3899	0V	5.3V	0V

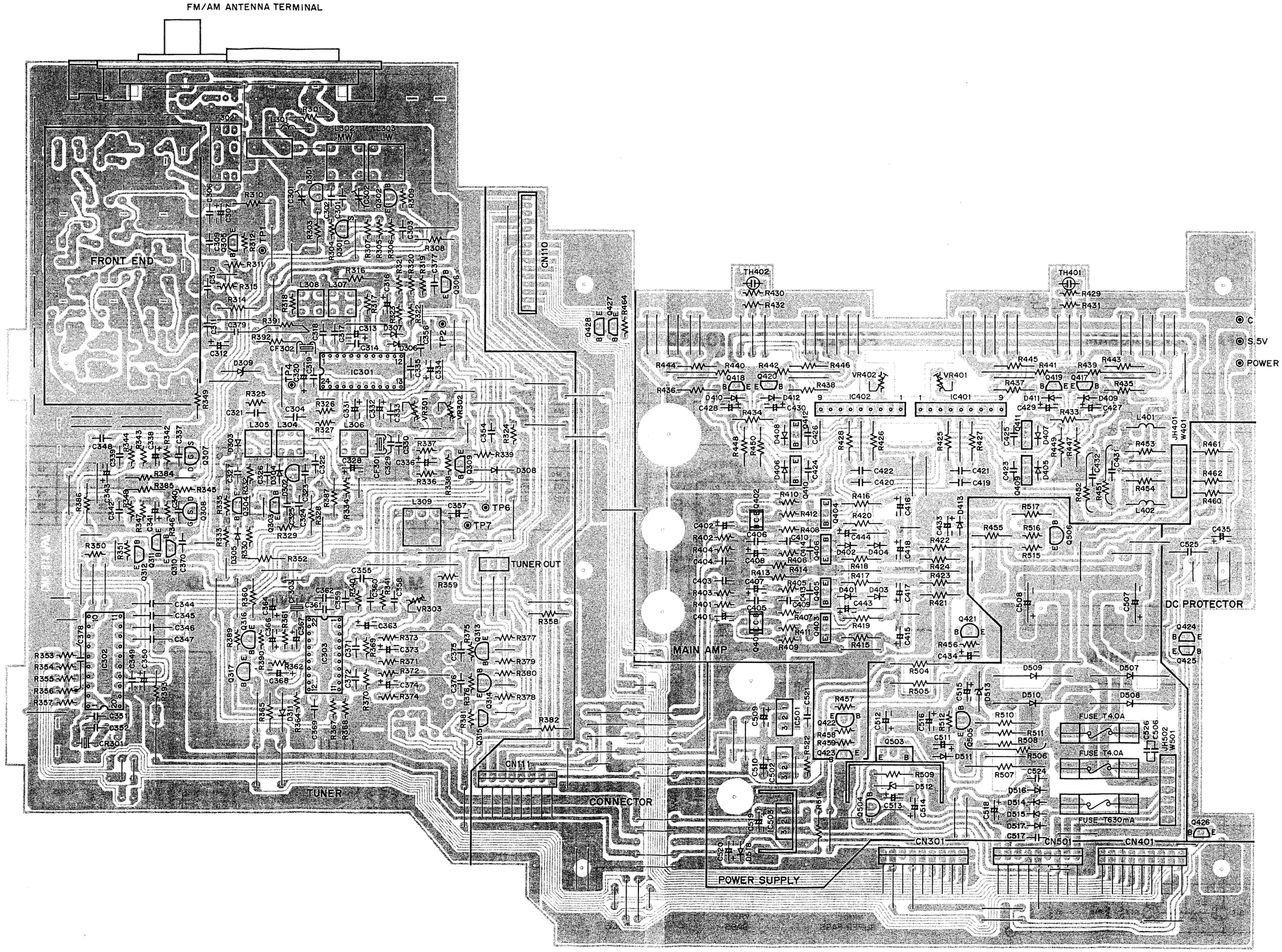
IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC101	UPC4570C	0V	0V	0V	16.7V	0V	0V	0V	17.3V	–	–	–	–	–	–	–	–	–	–	–	–
IC102	LC7821	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	−16.7V	0V	0V	0V	0V	0V	17.3V	17.3V	0V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	–	–	–	–	–	–	–	–	–	–

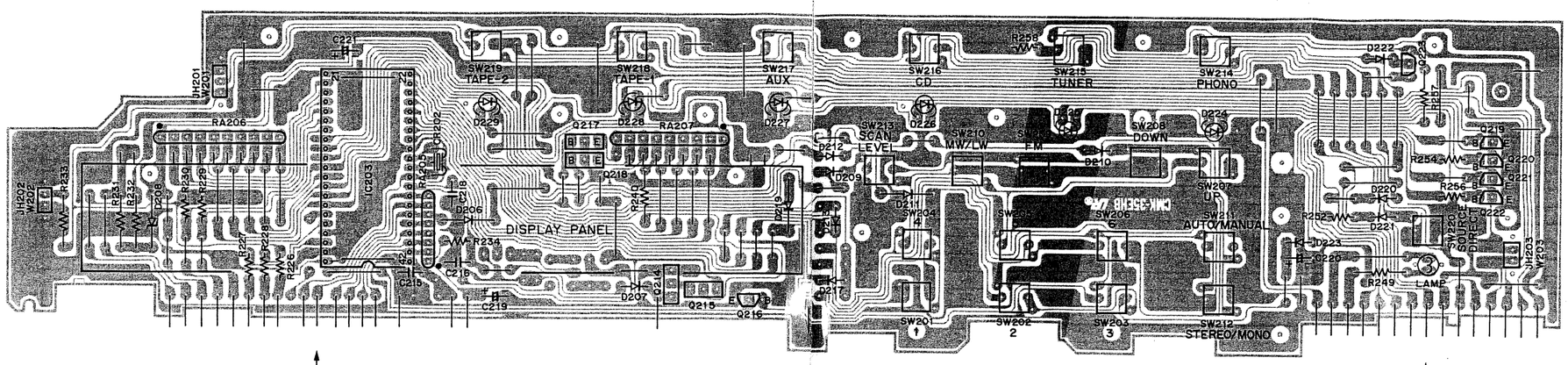
MAIN VOLUME P.C.BOARD
(BOTTOM VIEW)



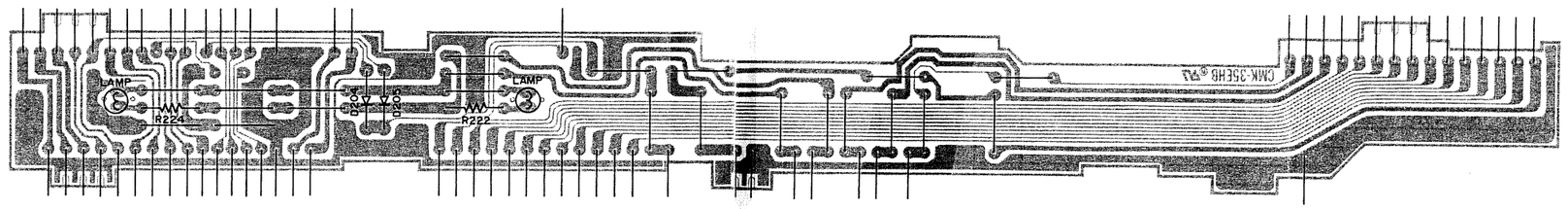
MAIN/TUNER P.C.BOARD
(BOTTOM VIEW)



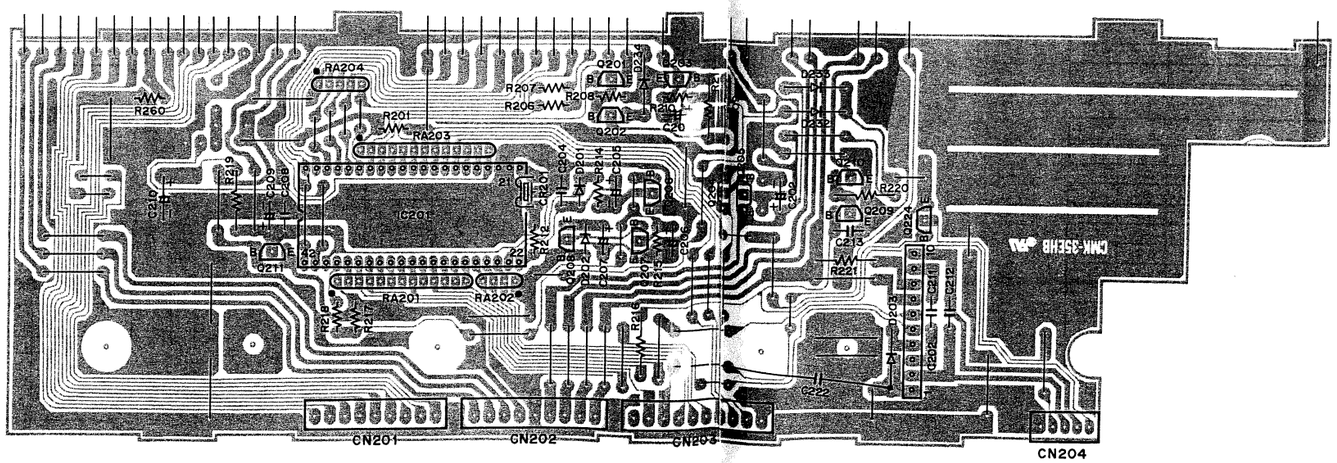
FUNCTION SWITCH P.C.BOARD
(BOTTOM VIEW)



U-CON CONNECT P.C.BOARD
(BOTTOM VIEW)



U-CON P.C.BOARD
(BOTTOM VIEW)



IC & TRANSISTOR REFERENCE VOLTAGE TABLE

IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC103	TC9215P	0V	0V	0V	0V	4.2V	0V	0V	−13.8V	0V	0V	0V	4.2V	0V	0V	0V	14.3V	–	–	–	–
IC104	RC4558	0V	0V	0V	−13.8V	0V	0V	0V	14.2V	–	–	–	–	–	–	–	–	–	–	–	–

IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC201	LC6522H	3.7V	3.6V	4.7V	4.7V	4.7V	4.7V	4.3V	5.5V	5.5V	5.5V	0V	4.9V	5.5V	3.0V	−0.1V	5.5V	0V	5.5V	0V	0V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		2.0V	1.4V	4.7V	0V	0V	0V	5.5V	5.5V	5.5V	0V	5.4V	4.7V	5.5V	5.5V	5.5V	5.5V	0V	5.5V	4.4V	4.8V
		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
		3.7V	3.1V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IC202	LB1641	0V	0V	0.5V	3.4V	0V	1.7V	15.8V	15.2V	4.8V	3.5V	–	–	–	–	–	–	–	–	–	–
IC203	TMP47C441	3.1V	0V	0.3V	0V	4.6V	0V	−21.9V	−21.9V	−21.8V	−21.9V	−21.8V	−21.7V	−21.7V	−21.8V	5.4V	0V	−13.7V	−13.5V	−13.5V	−13.6V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		0V	−13.7V	−6.2V	−2.4V	−13.9V	0.4V	0V	0.4V	0.4V	0V	2.1V	4.9V	4.8V	5.3V	5.5V	0V	0V	0V	0V	0V
		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
		0V	4.8V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC301	LA1266	2.4V	2.4V	2.4V	0V	11.4V	11.3V	11.3V	1.3V	3.7V	2.3V	3.3V	3.1V	0V	1.4V	1.5V	0V	0V	2.4V	1.5V	0.1V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		3.9V	3.9V	3.9V	3.0V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IC302	LM7000	1.5V	0V	0V	0V	5.5V	5.5V	0V	0V	11.9V	10.1V	0V	0V	0V	2.8V	5.4V	5.4V	1.5V	1.4V	0V	1.5V
IC303	LA3401	3.1V	3.1V	3.1V	3.1V	6.2V	3.1V	3.1V	6.1V	3.1V	0V	0.2V	0V	5.1V	4.9V	0V	2.8V	7.2V	4.3V	2.8V	5.5V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		1.7V	11.5V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

IC PIN NUMBERS DC VOLTAGES

Ref. No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC401,402	LA2500	1.1V	0.3V	1.0V	1.0V	−1.0V	0V	−0.5V	−0.5V	−0.3V	–	–	–	–	–	–	–	–	–	–	–
IC501	NJM78M18FA	18.1V	0V	35.8V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IC502	NJM79M18FA	−17.5V	−37.2V	0V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IC503	NJM78M12FA	11.9V	0V	19.3V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

TRANSISTOR DC VOLTAGES

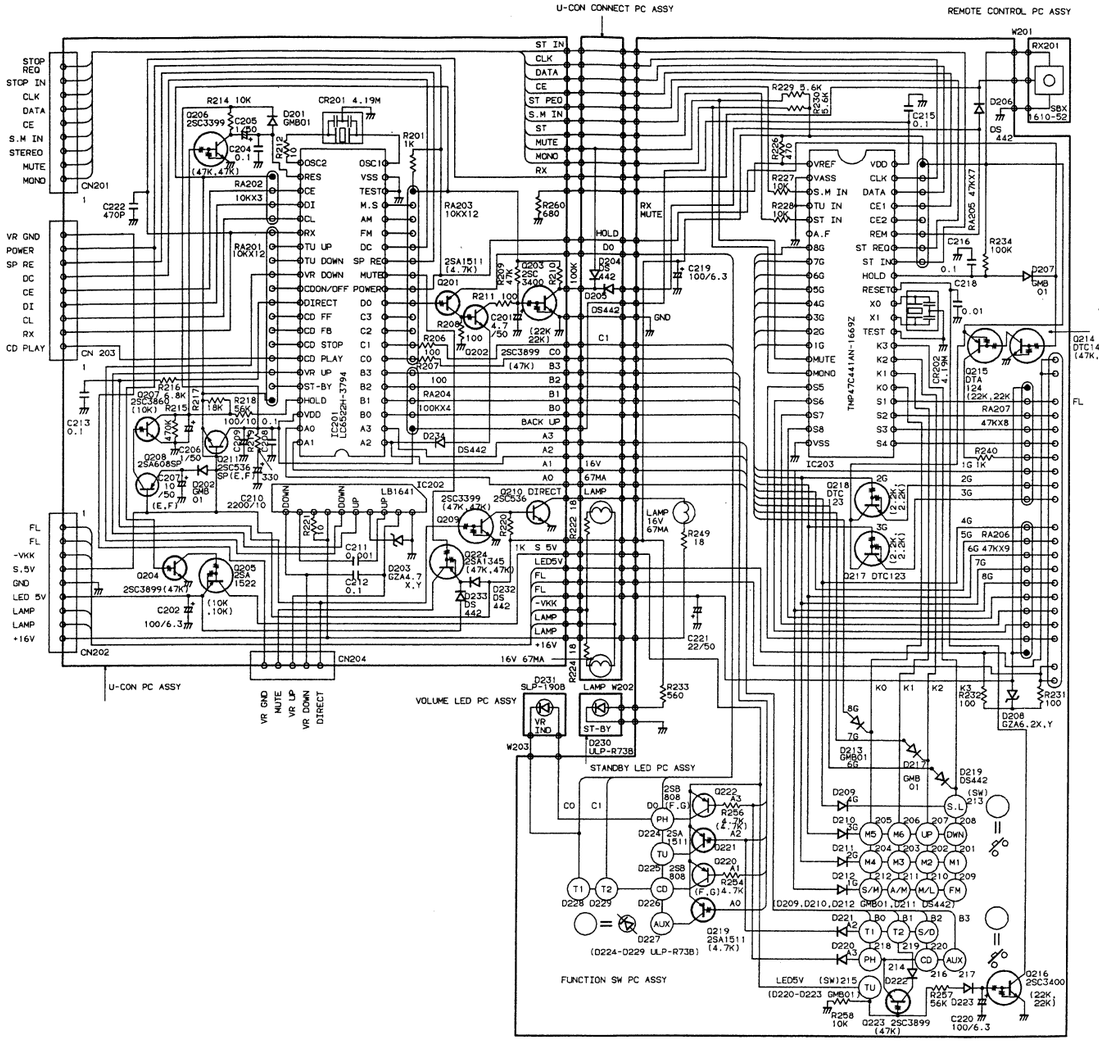
Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E
Q101,102	2SC4038	−1.9V	0V	0V	Q204	2SC3899	4.9V	0V	0V	Q216	2SC3400	5.5V	1.8V	0V
Q107,108	2SC2021	−1.0V	13.8V	−1.6V	Q205	2SA1522	0V	4.5V	4.6V	Q217	DTC123	−25.3V	5.5V	−25.3V
Q109,110	2SC2021	−1.1V	13.8V	−0.4V	Q206	2SC3399	2.6V	0V	0V	Q218	DTC123	−25.3V	5.5V	−25.3V
Q111,112	2SC4038	−0.8V	13.8V	−0.2V	Q207	2SC3860	−0.3V	4.5V	0V	Q219	2SA1511	3.7V	3.2V	4.5V
Q113,114	2SC4038	−0.1V	13.7V	−0.8V	Q208	2SA608	5.5V	−0.5V	5.4V	Q220	2SB808	4.6V	2.6V	4.5V
Q115,116	2SC4038	−0.1V	13.7V	−0.7V	Q209	2SC3399	4.2V	0V	0V	Q221	2SA1511	3.7V	2.3V	4.5V
					Q210	2SC536	0V	15.8V	0V	Q222	2SB808	4.6V	3.6V	4.5V
Q201	2SA1511	4.2V	0.5V	2.9V	Q211	2SC536	5.5V	4.8V	5.5V	Q223	2SC3899	0V	4.6V	0.1V
Q202	2SC3899	0.5V	0.6V	0.4V	Q214	DTC144	4.9V	0V	0V	Q224	2SA1345	5.5V	−1.8V	5.4V
Q203	2SC3400	0.6V	5.5V	0V	Q215	DTA124	0V	1.8V	5.5V					

TRANSISTOR DC VOLTAGES

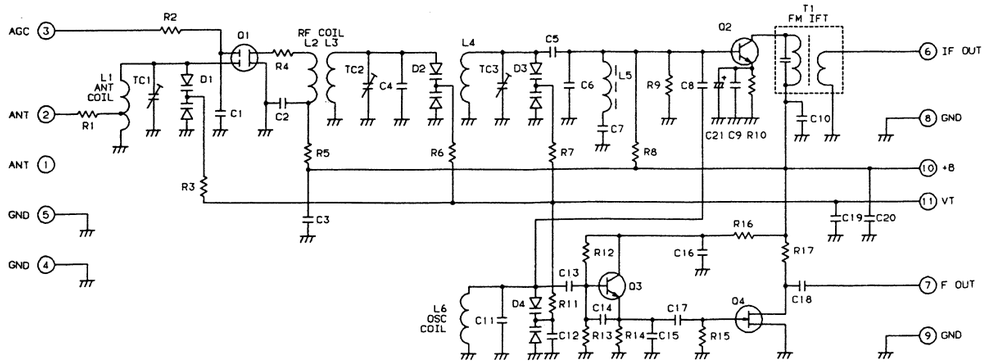
Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E	Ref. No.	DEVICE	B	C	E
Q302	2SC3792	−6.5V	0V	0V	Q401,402	2SC3066	−0.1V	48.0V	−0.7V	Q426	2SA1348	5.5V	0V	5.5V
Q303	2SC3402	0V	0.1V	0V	Q403,404	2SA1209	47.9V	0V	48.5V	Q427	2SC3399	4.9V	0V	0V
Q304	2SC4048	0V	3.3V	0V	Q405,406	2SC2911	−47.9V	−1.3V	−48.5V	Q428	2SC3402	0.1V	17.2V	0V
Q305	2SD1012	0V	3.4V	0V	Q407,408	2SD1682	0.2V	0.3V	−0.3V					
Q306	2SC3399	0V	11.3V	0V	Q409,410	2SC3117	1.1V	49.4V	0.5V	Q501	2SC536	6.2V	9.2V	5.5V
Q309	2SA1345	1.5V	1.5V	0.1V	Q411,412	2SA1249	−1.0V	−49.5V	−0.5V	Q502	2SC3402	4.9V	0.1V	0V
Q310	2SA1345	0V	−6.5V	0.1V	Q413,414	2SC3181	0.5V	49.7V	0V					
Q311	2SC3399	10.1V	0V	0V	Q415,416	2SA1264	−0.5V	−49.8V	0V	Q503	2SD1913	15.9V	44.7V	16.4V
Q312	2SA1590	11.9V	0.1V	11.9V	Q417,418	2SC536	0V	1.0V	0V	Q504	2SC536	5.2V	15.8V	4.6V
Q313	2SC536	−6.5V	0V	0V	Q419,420	2SA608	0V	0V	0V	Q505	2SB560	−25.8V	−46.0V	−25.2V
Q314	2SC536	−6.5V	0V	0V	Q421	2SC2274	−48.9V	−49.5V	−49.5V	Q506	2SA984	−0.3V	−49.5V	0V
Q315	2SA1522	5.4V	−6.5V	5.0V	Q422	2SA984	17.4V	18.1V	18.1V			S	G	D
Q316	2SC536	11.8V	11.9V	11.3V	Q423	2SA3402	3.1V	0V	0V	Q301	2SK246	4.0V	2.9V	10.6V
Q317	2SC3399	0V	11.8V	0V	Q424	2SC536	0V	5.5V	0V	Q307	2SK583	0V	1.4V	1.3V
					Q425	2SC536	0V	5.5V	0V	Q308	2SK583	0V	1.4V	0.5V

NOTES:
All voltages indicated on the schematics are measured under the following conditions.
a. Use a V.T.V.M.
b. All voltages ±10 % with respect to chassis ground.
c. No signals at input terminals.
d. AC input at 220 volts 50 Hz.

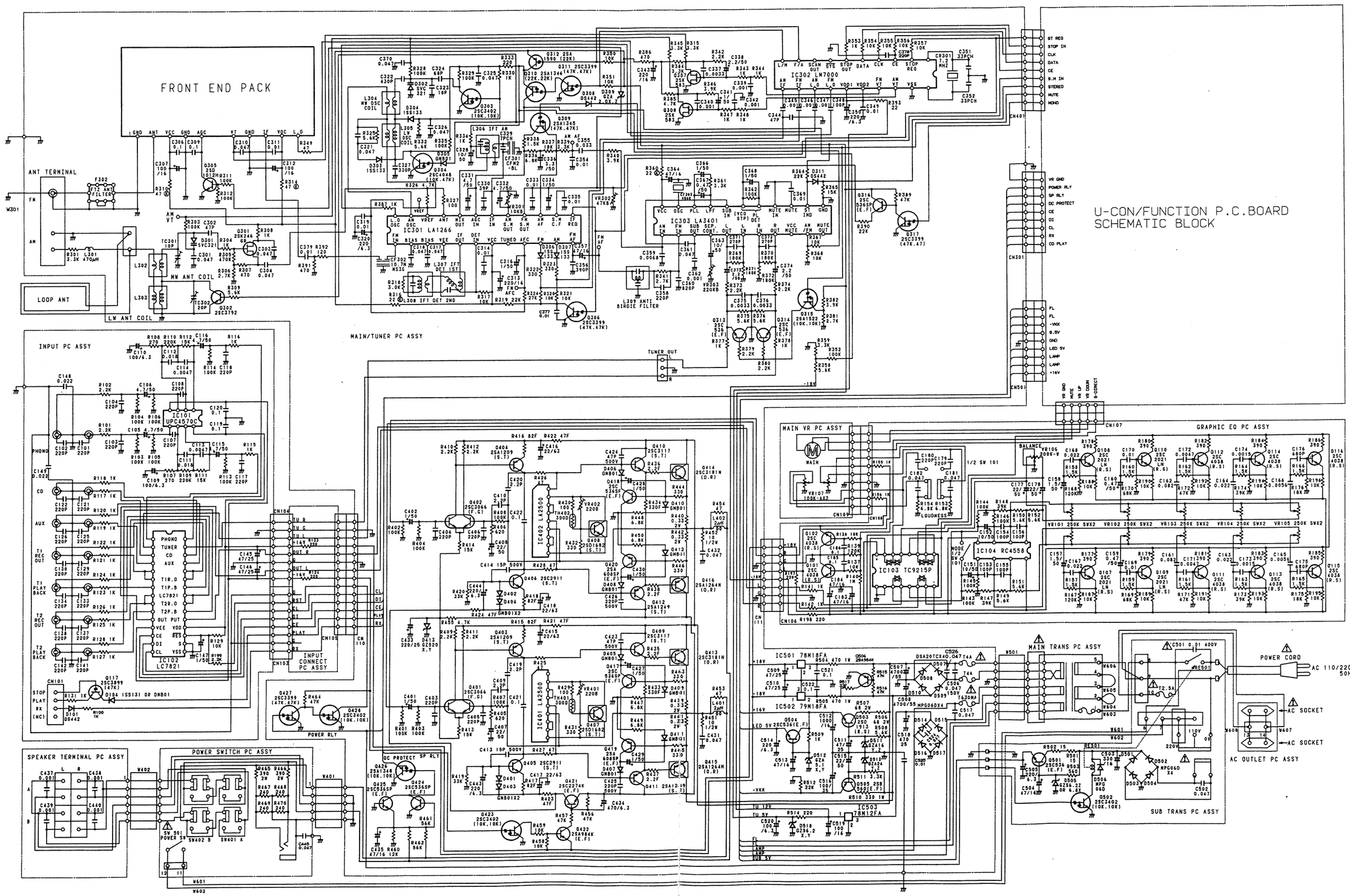
SCHEMATIC DIAGRAM (1)



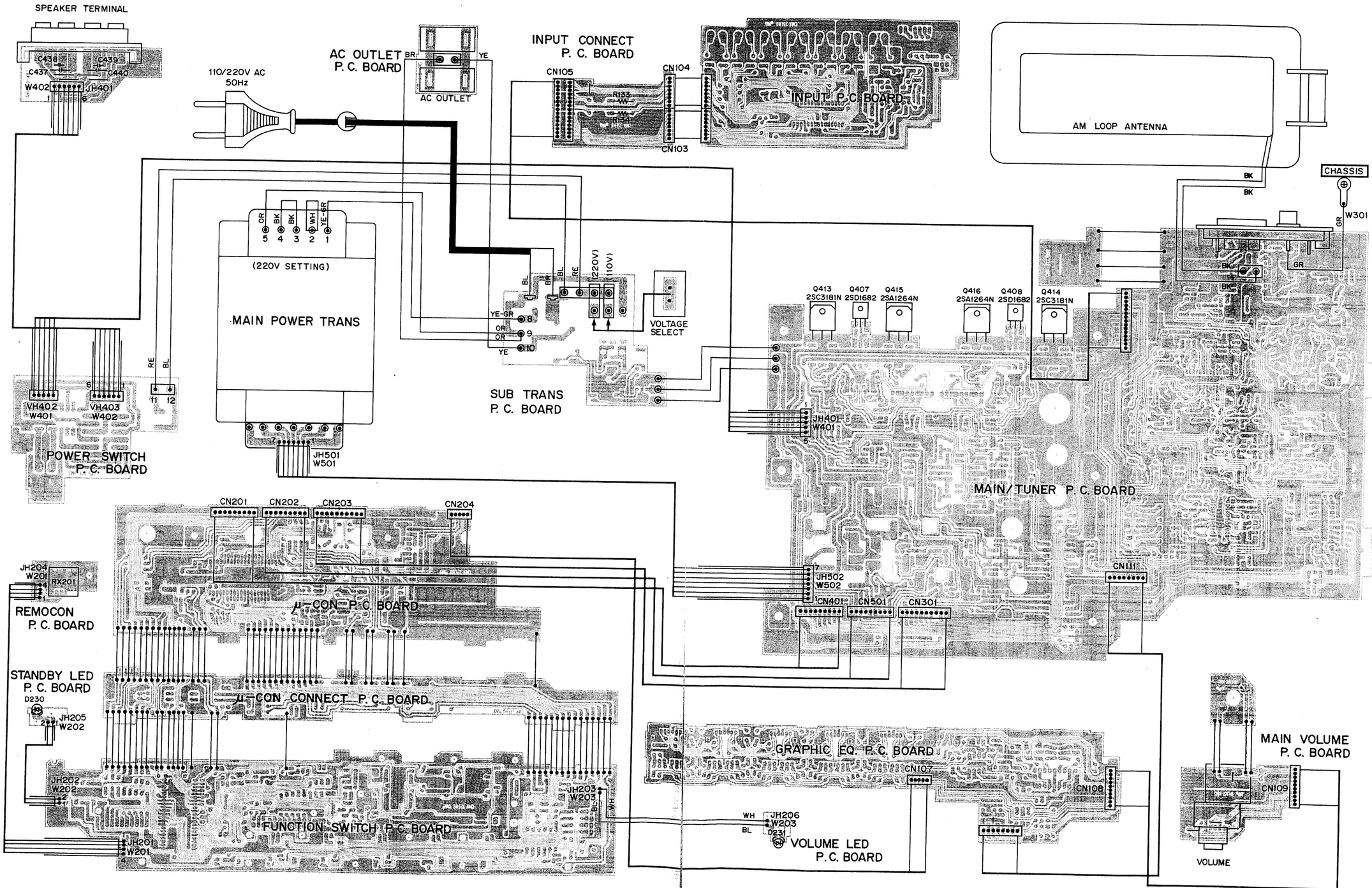
FRONT END SCHEMATIC DIAGRAM



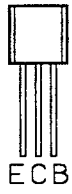
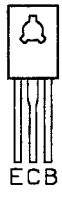
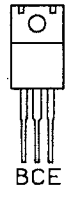
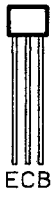
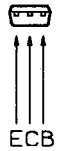
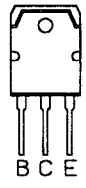
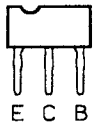
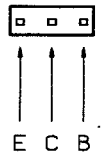
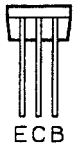
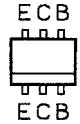
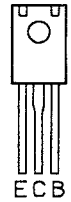
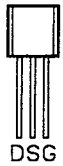
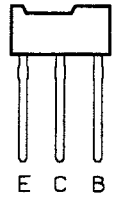
SCHEMATIC DIAGRAM (2)



POINT TO POINT WIRING DIAGRAM



IC & TRANSISTOR LEAD IDENTIFICATION

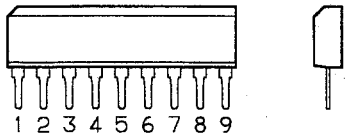
TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA984 2SC2274 2SC3792			2SB560		
2SA1209 2SA1249 2SC2911 2SC3117			2SD1913		
2SA1511 2SA1522			2SA1264 2SC3181		
2SC2021			2SA1345 2SA1346 2SA1348 2SA1590 2SA608 2SB808 2SC3399 2SC3400 2SC3402 2SC3860 2SC3899 2SC4048 2SC536 2SD1012		
2SC3066			2SD1682		
2SK246 2SK583			DTA124 DTC123 DTC144 2SC4038		

TERMINAL NAME

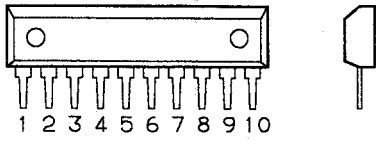
B → BASE	S → SOURCE
C → COLLECTOR	G → GATE
E → EMITTER	D → DRAIN

IC & TRANSISTOR LEAD IDENTIFICATION (Continued)

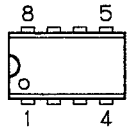
LA2500 FRONT/SIDE VIEWS



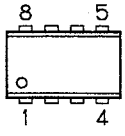
LB1641 FRONT/SIDE VIEWS



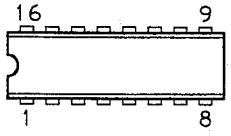
UPC4570C TOP VIEW



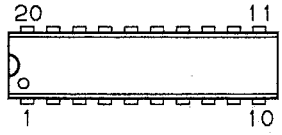
RC4558 TOP VIEW



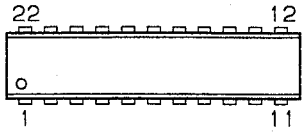
TC9215P TOP VIEW



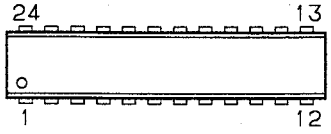
LM7000 TOP VIEW



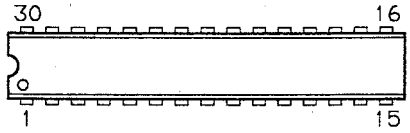
LA3401 TOP VIEW



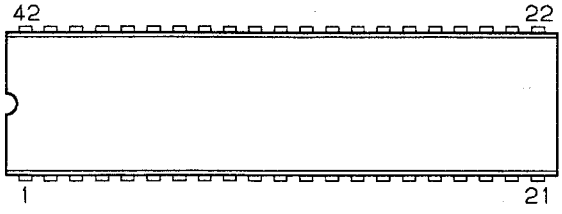
LA1266 TOP VIEW



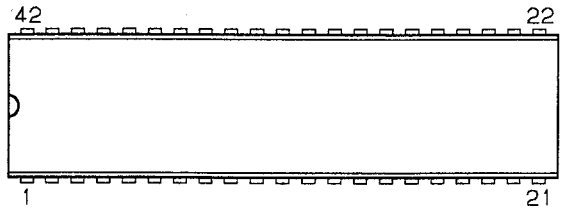
LC7821 TOP VIEW



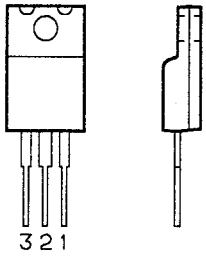
TMP47C441AN-1669Z TOP VIEW



LC6522H-3794 TOP VIEW



NJM78M12FA TOP/SIDE VIEWS
NJM78M18FA TOP/SIDE VIEWS
NJM79M18FA TOP/SIDE VIEWS



Bezeichnung/Description
SERVICE MANUAL
Teile-Nr./Parts No.
WM570447
Menge/Quantity
1
LS-Nr.
671102 / 11
Lagerort
38C04
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